Supervisory Management

JULY 1956

SPOTLIGHT ON THE FOREMAN'S JOB

A "close-up" of how 56 foremen spend an average workday

DO YOU HAVE A BACKSTOP?

Without one, a supervisor may find himself in a serious jam—or even miss out on promotion

WHEN IT'S TIME FOR A CHANGE . . .

The supervisor often meets stiff opposition from his workers. Here's how he can overcome it

AMERICAN MANAGEMENT ASSOCIATION

Words to Live By

THE UNCOMMON MAN

I do not choose to be a common man. It is my right to be uncommon—if I can. I seek opportunity—not security. I do not wish to be a kept citizen, humbled and dulled by having the state look after me. I want to take the calculated risk, to dream and to build, to fail and to succeed. I refuse to barter incentive for a dole. I prefer the challenges of life to the guaranteed existence; the thrill of fulfillment to the stale calm of utopia. I will not trade freedom for beneficence nor my dignity for a handout. I will never cower before any master nor bend to any threat. It is my heritage to stand erect, proud, and unafraid; to think and act for myself, enjoy the benefit of my creations, and to face the world boldly and say: "This I have done. All this is what it means to be an American."

—Dean Alfange in *Voiceways*
(New York Telephone Co.)

Supervisory Management

VOL. 1 NO. 8 JULY 1956

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ARTICLES

Spotlight on the Foreman's Job ..... *Robert H. Guest* 2

How to Stimulate Workers' Ideas ..... *A. Conrad Posz and Fred Dowling* 8

Quality—It's the Supervisor's Job ..... *J. M. Juran* 12

Safety: Getting Your Workers into the Act 17

Test Your Safety I.Q. ..... *American Mutual Liability Insurance Co.* 20

Do You Have a Backstop? 23

33 Guides to Work Simplification ..... *Harold R. Nissley* 28

Song of a Successful Secretary ..... *Elizabeth Ann Christman* 31

What Automation Will—and Won't—Do 32

How's Your Batting Average? ..... *Herbert F. Goodwin* 40

A Blueprint for Cost Control ..... *Robert P. Neuschel* 43

Management Men in Action: The Job of the Personnel Administrator ..... *Leon J. Dunn* 48

When It's Time for a Change ..... *Robert Tannenbaum* 51

Don't Let George Do It! ..... *William D. Fentress* 57

How's Your Telephone Personality? ..... *Donald Clinton Power* 61

SUPERVISORY MANAGEMENT is published monthly by the American Management Association, 1515 Broadway, Times Square, New York 36, N. Y. The Association does not necessarily stand sponsor for views expressed by the authors in articles issued in or as its publications. Subscriptions: $6.50 per year (nonmembers $7.50), bulk rates available. Volume 1, No. 8, July, 1956. Copyright 1956, American Management Association, Inc.

SPOTLIGHT ON THE FOREMAN'S J

By Robert H. Guest
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How does the foreman spend his day? Close observation of 56 foremen at work brought out some revealing answers

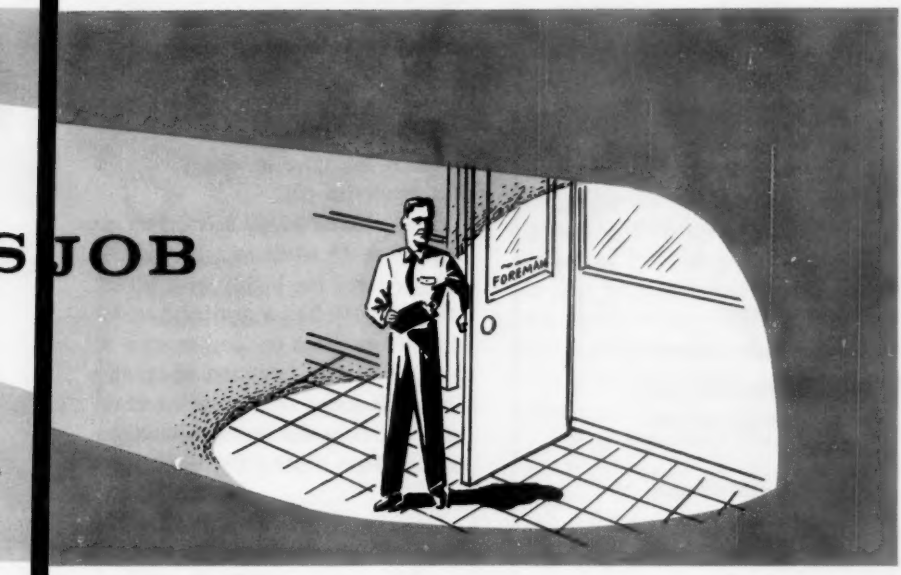
"THIS job is just one damned emergency after another." That's the way one foreman we talked to described his job. And basically that's what we found out about foremen's jobs generally after making a detailed study of production foremen in an auto assembly plant.

The purpose of the study was to find out exactly what foremen do on the job. To get the answers, we followed 56 foremen throughout a day at work, recording, minute by minute, everything they did.

Of all the findings that resulted from the survey, the one that stands out most clearly is that the foreman operates on a crisis schedule. It's a pressure job, marked by constant interruptions and a never-ending series of problems that have to be handled in rapid-fire order. The job calls for a man who can keep a great many different things in his mind at the same time and can juggle all the different problems while deciding which one to act on first.

It won't come as a flash to most foremen to find out that they have a hectic job, but they may not realize how hectic it is. For example, in the plant where we made our study, the average foreman was doing something different every 48 seconds. The number of activities the foremen took part in ranged from a low of 237 to a high of 1,073 during an eight-hour day, not including the lunch break.

Typical of the kind of pace these foremen maintained during the day is this sample section from the record kept on one of the assembly-plant foremen:



TIME	
2:15 P.M.	Foreman checks with scheduler. Looks at hourly report of number of cars coming through body shop.
2:16	Walks over to repairman on pickup line and checks to see if earlier repair trouble was corrected.
2:17	Calls over inspection foreman to show him where a hole is missing in a piece. Inspection foreman says he will notify the trim department.
2:19	Tells repairman to locate the hole by eye until it comes through all right.
2:19½	Stops for a drink of water.
2:20	Walks over to station 5 and asks his utility man how many men he still has to relieve.
2:20½	Moves along the line – stations 5, 6, 7–checking visually on the quality of work.
2:21	Checks a loose nut on a fixture at station 7. Speaks with operator.
2:22	Man at station 3 calls for materials. Foreman tells man at subassembly bench to make up more material.
2:23	Walks over to stock man and tells him the line is getting low on hinges. They discuss how many hinges are needed and agree there are enough to cover the next day's production.
2:25	Walks to station 1 and makes visual inspection of the car body to check on the hole discussed earlier at the pick-up line.
2:26	Sees foreman from another section and tells him about the missing hole.

Developed from *The Foreman on the Assembly Line*, by Charles R. Walker, Robert H. Guest, and Arthur N. Turner, Harvard University Press. Copyright 1956 by the President and Fellows of Harvard College.

HOW FOREMEN SPEND THEIR TIME

TOPIC	Per Cent of Time
Quality	18.2%
Work progress	13.2
Personnel administration	11.2
Personal relations and other non-job-related topics	10.2
Foreman performance of an operation	8.1
Tools, jigs, and fixtures	8.1
Materials	8.0
Employee job performance	7.6
Production schedule	5.2
Grievances	2.0
Injury, illness	1.2
Housekeeping	.5
Work standards	.4
Safety	.2
Meeting	.1
Miscellaneous	2.4
Topic unknown	2.4

The results shown above and in the tables on the opposite page are based on a detailed study of 56 production foremen in an auto assembly plant.

The average foreman in this plant walked more than four miles while on the job, sat down less than one minute during the workday, and spent more than half (57.3 per cent) of his time in direct contact with other people.

Generally the study seemed to indicate that the foremen management had not rated too highly were busier —that is, they had a greater number of activities listed on their records at the end of the day—and they also tended to spend more time on manual work than did the men management ranked among its better foremen.

However, it was apparent that the record of how foremen spend their time was not a completely accurate indicator of their ability. Even the better foremen when faced with a problem caused by absenteeism, a mechanical breakdown, a sudden schedule change, or similar difficulties had to spend a good bit of their time solving the particular problem at the expense of other important supervisory duties.

It was also apparent from the study that the foreman was in contact with more people than anyone else in management. Rarely did the foremen we studied contact fewer than 25 people during the day, and frequently they dealt with more than 50.

As might be expected, the group that received the most attention from the foremen was their own operators, with whom they were in contact more than one quarter of the day; but the time spent with each

WHO FOREMEN CONTACT ON THE JOB

PEOPLE CONTACTED	Per Cent of Time
Own operators	26.4%
Other foremen	7.0
General foreman	4.6
Department superintendent	1.1
Other superiors	.4
Service personnel	
Maintenance	2.5
Inspection	2.3
Material	2.6
Work standards	.4
Other operators	3.8
All other	6.2
Total Contact	57.3
No Contact	42.7

operator averaged out to less than five minutes per day. Over-all, the foremen spent more time contacting individuals outside their department, such as other foremen, the general foreman, and service personnel, than they did in dealing with the workers under them.

The foremen in this study spent an average of 46.6 per cent of the time talking. Surprisingly, however, very little of this (.4 per cent) involved on-the-job training. A study of the detailed records showed that training was a category that suffered because of the many emergencies that had to be handled immediately.

The following is an account of how one foreman, a man we'll call Pat, spent his day. He had what could be termed a typical day on a typical job, and the figures on how he spent his time are pretty much in line with the average for the plant. The only factor that makes the account of Pat's day more important is that he had been singled out by management as being an outstandingly good foreman. In addition, he was highly regarded by his fellow foremen.

From following Pat throughout his eight hours on the job, here's what we learned: He spent just about 50 per cent of his time in direct contact with other people, 18 per cent in dealing with workers in his own

WHAT FOREMEN DO ON THE JOB

ACTIVITY	Per Cent of Time
Talk	46.6%
Look	20.9
Manipulate	9.6
Walk	6.8
Hand, carry	5.6
Read	2.9
Telephone	2.4
Write	2.1
Stand	1.0
Signal	.8
Listen	.6
Show	.4
Sit	.2

department, and about 9 per cent in contacts with his superiors. All told, he contacted 47 different people a total of 227 times during the day.

During almost 20 per cent of the day, Pat was actually doing production work. This figure is probably on the high side for an average day because he was forced to help out one of his workers due to a jam-up on the production line.

Checking on quality and the progress of the work being done took 25 per cent of his time, and another quarter of the day was taken up with work involving materials, tools, and equipment. About 17 per cent of his time involved personnel administration—assignment, procurement, etc. He spent very little time (.4 per cent) on nonproduction activities, such as safety, housekeeping, and grievance handling.

Some personal characteristics

These are the highlights on how Pat spent his time. Now as to how this "exceptionally good foreman" performed his job, here are the notes the observer jotted down about Pat's personal characteristics after seeing him react in all sorts of situations:

In dealing with his men, it was apparent that Pat was both respected and liked. The number of contacts he had with his men did not seem too important. He talked with some of them several times, others only once or twice, if at all. What was important in his relationship with them was the quality of the contacts.

During the entire day he gave direct orders only nine times and never gave an order in a "do it or else" manner.

At one point during the day, Pat received word that one of the company officials from the central office had arrived and was inquiring about one of the operations in Pat's department. Unlike some of the other foremen we observed in similar situations, Pat did not tell his workers that "Detroit is complaining." Instead, he pointed out to the man most concerned with that particular operation that "we have to watch the operation carefully." He relied on instruction rather than reprimand to correct errors.

In dealing with his superiors, Pat was obviously not afraid to speak up. He did not hesitate to ask his general foreman for an extra temporary operator, and he pushed his request for more help by talking to the superintendent.

He admitted to the general foreman of another department that he was responsible for a particular error —that he had made the mistake while operating the equipment himself. Pat also sought advice from his operators on several problems he didn't know the answers to.

He kept the foremen in other sections posted on the quality of their work as it came into his department, although in some instances his own section was not affected by this work.

A few times during the day he noticed workers from another section doing some of their work in his section, which crowded his own men. He did not speak to them directly

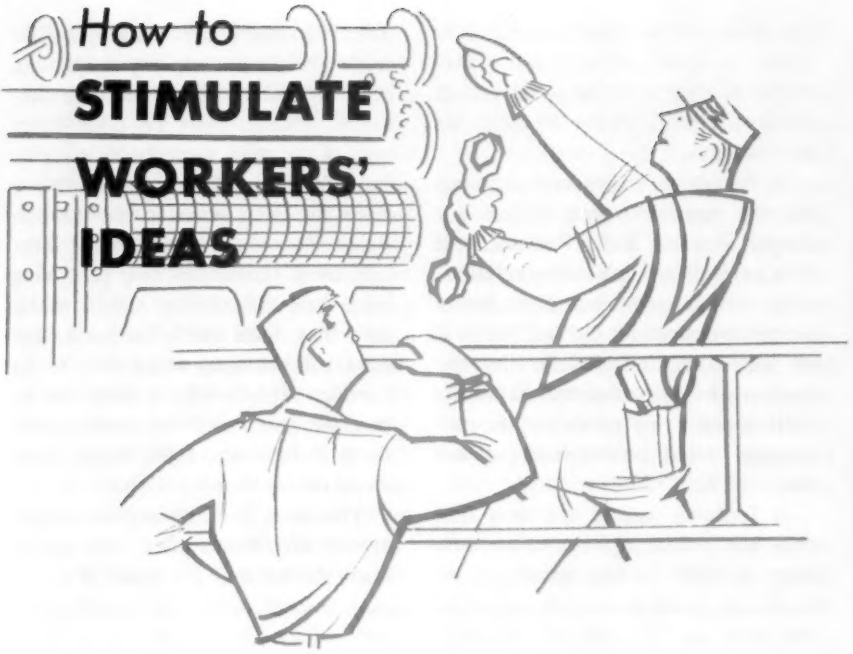
but contacted their foreman. At other times, he spoke directly with operators in other sections to ask them about the work being done in his own section.

Although an emergency came up on the assembly line which cut deeply into his time, Pat was still able to maintain a healthy relationship with his subordinates. Interestingly enough, he did not act as if he were consciously following the book on human relations. From his behavior and his remarks, his philosophy might be summarized this way:

A foreman has to see to it that each job is done right, that the men keep up with the line speed and do it with as few kickbacks as possible from the inspector, my boss, his boss, Detroit, the dealer, and the customer. The job can be done right only if the men want to do it right. As a foreman, it's my job to make it so the men want to do the job right. You don't push them. You help them. Then they help you. You keep their tools in top shape, make sure they have stock on hand, are right on the spot when they're in trouble, explain why a thing has to be done, listen to them, stand up for them if they are right, leave them alone unless they want you.

This is as good an explanation as any of why Pat is rated tops by his management and his men. ◆

How to STIMULATE WORKERS' IDEAS



By A. Conrad Posz and Fred Dowling
Michigan State University

Many workers are potential idea men, but original thinking must be encouraged

INCREASED business competition in recent years has heightened the need for creative thinking and put a high premium on idea men. But ironically, many companies are still doing nothing to stimulate creativity.

As you read this you may be saying, "This doesn't apply to my company. We have a suggestion system." That may be true, and you may be getting some worthwhile ideas from it. However, a suggestion system itself does little to foster creative effort.

What can be done to generate creative thinking? Following are eight suggestions that will help build creativity by stimulating imagination and by helping workers overcome personal stumbling blocks to creative thinking:

1. Realize creativity is universal

The first step in developing any resource is finding it. The supervisor must realize that there's a gold mine of new ideas in each of his workers' minds. Every human being, young or old, educated or uneducated, new on

the job or an old-timer, has the ability to think creatively. This talent may not be active, but it's there. Once the supervisor accepts the evidence that imagination is universal, he begins to see the untapped wealth of ideas that surrounds him. Each man hired has the potential of making thousands or even millions of dollars for the company. Realizing the ability is there isn't enough, however; something must be done to develop it.

2. *Make workers problem-conscious*

Problems are seldom solved unless people are aware of them. As a result, a worker may go along for years doing his job in a difficult manner just because he never thought of trying to simplify it. He isn't conscious of the problems that exist. But the fact that he hasn't done anything thus far doesn't mean he can't do anything. Directing his attention to the fact that there are problems in connection with his work may be all he needs to make him think.

One successful supervisor reports that he spends part of each day trying to make people think creatively. During his tour of the work area, he may watch a man at work for a while and then pose a problem. It may involve work simplification; it may concern improving a product or lowering production costs. He has found that once he can make a worker problem-conscious, the employee will not only come up with possible solutions to the specific problem that was posed, but he'll have ideas on other problems as well.

3. *Stimulate the imagination*

If the workers themselves aren't using their ability to think creatively, what can the supervisor do? Making them problem-conscious is an indirect method that may help. But this may not be enough. Another technique is the brainstorming session, in which any ideas that come to mind are accepted and no judgments are made until after the brainstorming session is over. If good problems are chosen for these sessions, the imaginative exercise will help workers become more creative.

Another method that can be used to stimulate imaginations is to give employees a list of questions. For example, a list for men working on an assembly line might include these:

a. Could I do this job any other way?
b. How have other people done this?
c. How about using something else (something newer, something cheaper, something older?)
d. Could I do this in combination with something else?
e. Could I do this in combination with someone else?

Other questions should be added to fit the list to the job. Each type of job requires a different list.

A few brainstorming sessions and a few question lists usually do wonders in stimulating imaginations. The job doesn't end there, however. The effort may be wasted if other areas aren't considered.

4. *Avoid too rapid judgment of ideas*

When a worker comes to you with an idea that you don't think will work, be careful of what you say. In the first place, if you say it won't work, you may be wrong. What may seem like a crazy idea is sometimes the best solution. Wild imaginings may be the work of a new Edison. In addition, if you tell the worker that his idea is no good he gets discouraged. And discouragement is death to creativity.

Instead, encourage the man to further effort. You might try something like this: "I'm not completely sold on this idea, but it shows you're on the ball. Why don't you try it out on an experimental basis. If it doesn't work, see what you can think up that will make it work." True, the experiment may lead down a blind alley. But the creative experience and encouragement may lead to other solutions to the problem, or help the man solve another problem.

If an experimental study is out of the question, at least encourage the man to apply his imagination further to the problem. Your reaction to his suggestions can thwart his creative efforts, or it can make him try even harder. A positive response will encourage him to greater creativity.

5. *Overcome fear of ridicule*

Many good ideas are discarded before they are ever suggested to anyone because the originator is afraid someone will laugh at him. He's afraid of being called a crackpot. The supervisor can do much to lessen the fear people have of being laughed at. He should go all out to impress his group that he doesn't regard any ideas as being crazy. Once the workers begin to see that their supervisor won't laugh at them, they won't be afraid to make suggestions. Unusual ideas that were previously lost will be brought out into the open.

Since fear of looking foolish thwarts creativity, every idea suggested by an employee should be received and acknowledged in a way that will not make the worker feel ridiculous.

6. *Identify your idea men*

Front-line supervisors should be on the lookout for idea men. If some really creative people are spotted, higher levels of management should be told about them and steps should be taken to utilize their talents. Let them know they have been recognized as special people. Try to put them in jobs that they like, and in a fairly calm emotional environment, because emotional disturbances are an obstacle to creative effort. If possible, give these men time to think. And don't put pressure on them to produce ideas. Research laboratories have found that undue pressure on creative people is usually a hindrance rather than an aid. Encourage these gifted people to take special training courses.

7. *Try to give men time to think*

A young engineer who recently enrolled in a class in creative thinking showed real promise as an idea man. During the eight-week course, his

flow of ideas increased. However, he was discouraged because he didn't seem to be creative on his job. Questioning revealed that his bosses discouraged his creative thinking by keeping him continually under time pressure. Every job he was assigned to was a "hot" job. As soon as one rush job was completed, another pressure job followed. He didn't have time to think. Apparently his bosses believed that thinking time was wasted time.

Research studies have proved conclusively that time pressure and tension hinder the imagination. Perhaps, if you have a man with a creative bent, you can make better use of his talents by giving him time to think rather than constantly pressuring him for solutions to tough problems.

8. Help men carry out their plans

If a worker has the idea that he can do nothing to work out the final details of the plan he's thought up, he is often cautious about suggesting it. While working in a shipyard during World War II, a young man came up with an idea that the yard officials thought was good. They sent him a letter requesting that he bring in a working model. "A working model!" he thought disgustedly. "I'm no engineer!"

He ended up by throwing his plans into the wastebasket. No follow-up was made on his idea. Instead of asking him to come in to discuss the idea, and perhaps even putting an engineer to work on it with him, the yard officials had, in effect, slammed the door in his face.

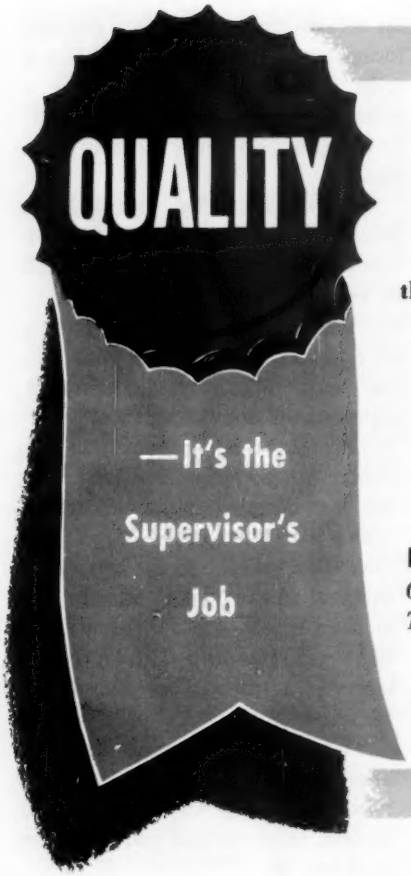
This isn't an isolated incident, either. All too frequently good ideas are lost because companies fail to follow up on employee suggestions. Make sure you follow through on interesting ideas and see them through to completion—and let the workers know you're doing it. This kind of interest is a tremendous stimulus to idea-making.

These eight suggestions can help improve your workers' thinking habits. And this improvement will, in turn, help you and your company progress. ◆

The Ideal Boss

"What kind of person would you like your boss to be?" If this question were asked of your office workers, what would their answer be—and how would you compare? The National Office Management Association, of Detroit, Mich., recently asked 20,000 office workers their opinions, and came up with the following results.

Perfection of character and personality is neither demanded, expected, hoped for—nor even suggested—by an average office employee. The "ideal" boss in the office, according to survey results, fits this description: (1) He is between 40 and 49 years, is skilled at his job, and has "common sense." (2) He may show impatience and bad temper at times, but he is never unjust with his employees. (3) He may be given to some laziness and unpunctuality; these are not critical so long as they do not place an added burden on the workforce. (4) He can be stubborn, too—in fact, he is expected to be stubborn. But he cannot appear to "know everything" and to get good cooperation.



And to do it, he has to give his people the facts they need and guidance in turning out work that meets the standard

By J. M. Juran
Consulting Management Engineer
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QUALITY can't be inspected into a product; it has to be built in at the beginning. This means that in the planning stages quality is the responsibility of the designers and the engineers. They have to work out the plans and procedures that will make it possible to produce a good product.

But once the production line is ready to roll, it's the supervisor who is held responsible if quality isn't up to standard. Through the people in his department, he has to turn out a product that will meet the desired specs. He has to tell his workers what he wants, let them know how they're doing, and give them some means of regulating their work so that they can meet the quality requirements.

Near the top of the list of what every worker should know is what decisions they have the right to make on their own. This is a weak spot in many plants. Clear-cut policies have to be worked out to handle problems like who decides—say, after an hour's

operation—whether a process should be continued or whether the line should be shut down. Or who determines whether a product is acceptable for delivery to the next department or to the customer.

These are the kinds of decisions that have to be made on the shop floor every day, and if the workers don't know who is supposed to make them, they have to figure out for themselves who's going to come up with the answers.

In assigning fixed responsibility for problems like these, it may help the supervisor to use a chart like the one on page 15, which gives a tally on who is supposed to do what. To work out the details, it may be necessary to meet with other supervisors, for they are likely to have different ideas on who should catch the headaches. These differences will have to be thrashed out until an over-all understanding is reached.

The "who's responsible for what" cards won't do any good, however, if all the supervisors do is tuck them in their back pockets. They have to pass the word on to their people.

Workers need standards

In addition to knowing what decisions they have the right to make, the workers also need standards on which to base their decisions. The supervisor has to tell them how many pieces have to be measured how often, etc. Otherwise the workers have responsibility but no facts on which to act.

Of course, any employee who works with specs has to know what they mean. In addition, he should be aware of the fact that not all the quality characteristics called for in the specs are equally important. This is obvious in parts of the specification, since some sections call for close tolerances, while others permit greater leeway on tolerances. But there are other factors to consider than just tolerances.

Some of the characteristics called for in the specification are essential to the basic function of the product, for safety, for the life of the product, or for its interchangeability in the field. Other characteristics may serve to cut manufacturing costs, to improve appearance, or to make a product easier to use.

These distinctions are sometimes evident from the specifications, sometimes not. But the more the workers know about the relative importance of different parts of the specification, the more likely they are to concentrate their attention on the key characteristics.

In some companies, the specifications identify functional and nonfunctional characteristics. In other instances, lists are prepared which classify characteristics as being of critical, major, or minor importance. But if the specifications don't make these distinctions clear, the supervisor has to spell out what's important and what isn't.

Different meanings

Many quality characteristics can't be described by numbers, the way tolerances are. Instead, they have to be described by adjectives, and ad-

jectives convey different meanings to different people.

With characteristics of this kind, it is important that workers understand the interpretations given these characteristics by the engineers and inspectors. In some cases, physical standards may be set up. Here again, the supervisor who senses the need for these standards and who can get them from the responsible departments has been of real help to his workers.

If the supervisor is to get what he wants in the way of quality from those under him, he has to give them some means of finding out how their work compares with standard. This can be done either by the worker's own measurement or observations of a product or process—the most desirable way of handling the problem—or by someone else's measurement of the work.

Improving measurements

Many plants have had trouble because of insufficient measurement by the workers. In some situations the worker measures when the machine is first set up, but not thereafter. In other cases, he measures while the job is in process, but the frequency of measurement may be irregular or inadequate. In still other cases, inspectors go into the production area to make the measurements.

Here's what a supervisor can do to increase the effectiveness of measurement by the worker.

1. Work out with the quality control department a schedule of measurement, and explain to the worker how through these measurements he can best regulate the process.

2. Give the worker instruments which are quick and easy to use and which minimize the chance for error.

3. Ask the worker to record the measurements. This step serves as evidence that the measurements have been made. Again, make it as easy as possible for the worker by giving him self-recording instruments if possible, or simple forms on which to list the measurements. If an inspector makes the measurements, set up a system so that the worker gets this information. In some companies the worker and the inspector record their measurements on the same chart, so that they can make use of each other's data.

Control devices

To be able to do the job he's supposed to do, the employee has to have some way of regulating his work—a mechanical, chemical, electrical, or some other means of adjusting whatever he's doing. Without these devices, he can't turn out a good product. All he can do is stop production when defects start showing up.

In some plants, the control devices are built outside of the production department by a separate tool room. But the supervisor can help in the design of these devices by making it clear what the workers need. These needs might include:

1. A control device calibrated so that the worker can make a quick adjustment based on his measurements, without the need for cut and

WHO IS RESPONSIBLE FOR →	APPROVING MACHINE SET-UPS?	SHUTTING DOWN A RUNNING MACHINE?	ACCEPTING COMPLETED LOTS OF PRODUCT?	SORTING DEFECTIVE LOTS OF PRODUCT?	DEFECT PREVENTION		
					RECORDING BASIC DATA?	ANALYZING OF DATA?	ACTING ON DATA?
OPERATOR							
SET-UP MAN							
FOREMAN							
PATROL INSPECTOR							
BENCH INSPECTOR							
QUALITY ENGINEER							

A chart like the above helps to clarify who is responsible for what. To work out the details, the supervisor may have to consult with other supervisors.

try. If he has to cut and try too much, he'll get fed up.

2. A control device easy to get at and easy to work with. I have seen devices located where they were difficult to get at because of fumes or were hard to use because too much strength was needed. It is only human for a worker to forget about control devices if they are too difficult to operate.

3. A control device sufficiently stable so that the worker doesn't have to keep making adjustments. If the device is unstable, the worker will lose confidence in it and won't use it any more.

Many of the requirements for different kinds of regulating devices can only be determined by people on the production floor. That's why the supervisor can do so much to help engineers and toolmakers work up regulating devices that will really do the job.

Conflicting demands

In all of my experience, I have never met a supervisor or a worker who preferred making a defective product to a good one. However, I have seen numerous instances where a worker is faced with what may appear to him to be conflicting demands by the foreman—demands for both quantity and quality. In some instances the worker is paid based on how many pieces he turns out. As a result, he's inclined to believe that management is only interested in quantity.

There are also cases where the worker has not been convinced that failure to meet the specifications will make trouble for someone else. In one textile mill, for example, new women employees in the spinning room were failing to tie the required "weaver's knots" despite pleas and threats by their supervisor. The plant

manager heard about it and questioned one of the girls.

Her reply was "It doesn't make any difference, so why should we bother?"

All the plant manager could do, other than fire her, was to take her to the weaving department and show her how much trouble the weavers were having because of the incorrect knots the new girls were tying.

On seeing what was happening, the girl exclaimed, "Why weren't we told this before?" She said that the girls would be perfectly willing to tie weaver's knots once they found out how important it was, but that they hadn't been willing to do so merely because someone ordered them to without giving any reason.

There are also cases where workers find that defects beyond their control greatly outnumber those that they can control. As a result, they are inclined to think that management isn't really serious about quality if so much of the work is below standard.

Many of these problems are a natural result of big industry. In the small shop, the worker sees the entire cycle of design, production, and sales. He may even meet the customer and learn about the product quality needs firsthand. This isn't the case in the large factory. The worker does a highly specialized job and doesn't have a chance to get the over-all picture.

This means that the supervisor has to make up for this lack of perspective through training and by constantly stressing the importance of quality. He has to create a quality-consciousness in his workers, pointing out that the company's quality performance is important to the workers because quality makes sales and sales make jobs.

What it boils down to is that if the supervisor is to meet quality standards, he has to:

1. Tell the workers what they are supposed to do.

2. Give them a way to find out how their work compares with the standard.

3. Make it possible for them to control the quality of their work.

4. Give them the feeling that quality is vitally important. ◆

"One of the boys in the stock room is getting married."

—Reprinted by special permission of *The Saturday Evening Post*. Copyright 1952 by the Curtis Publishing Co.

Getting Your Workers into the Act

By following these suggestions, the supervisor can go a long way toward getting workers actively interested in accident prevention

LAST year, on-the-job accidents killed approximately 14,200 people, resulted in 1.9 million injuries, and cost business and industry around $3.3 billion, despite the fact that about 90 per cent of all companies had definite safety programs in operation.

These grisly statistics might seem to indicate that the safety programs aren't any good. But this isn't the case. Most company safety programs are sound; it's in the follow-through that they fall down. This is where the supervisor comes in, for he's the only one who's mainly responsible for safety. First of all, top management has to work out an effective program and support it energetically. Then it's up to the supervisor to push the program and try to instill a genuine enthusiasm for safety in the workforce.

In many plants and offices, almost the only time these conditions exist is right after an accident. There's nothing like a serious injury to put pep into a lethargic safety program. Everybody gets excited about safety: the walls are papered with posters; there's a drive to put goggles on every grinder; unsafe plant conditions that may have been winked at for months are suddenly fixed.

These crash-program safety drives do some good, but after a few months, interest usually dies down and safety practices backslide to

where they were before the accident. The supervisor's job, and it's a tough one, is to make sure that safety isn't a spasmodic, sometime thing. He has to keep the workers interested in safety. This isn't easy, because safety can become a pretty tired subject. But here are some suggestions on what supervisors can do to make employees safety-conscious. They are based on programs that have worked for other companies.

1. Get employees actively working on a safety program. Pick out a couple of workers to act as safety inspectors each month. Rotate the assignment, so that everybody gets a crack at it. Give them a checklist of what to watch for in the way of safety violations. At the end of the month, have them turn in a report on any unsafe practices and conditions they have noticed. Of course, serious problems should be reported at once. As part of the window dressing, it helps if they have special badges indicating they are inspectors.

At one company that tried this kind of program, workers reported 306 unsafe conditions in a 12-month period. Almost all were important enough to require action.

2. Rate the safety performance of every worker in the department. And make sure that everyone knows that safety is an important category in the performance rating.

3. After an accident, capitalize on the natural curiosity that results. Explain in detail what happened.

4. Publicize cases where safety equipment has prevented an accident. Some companies maintain displays of cracked safety glasses, dented hard hats, etc., with the name of the worker who avoided having an accident because he was protected: "Joe Blank can still see because he was wearing these safety glasses."

5. Another gimmick is the "X marks the spot" technique—putting

---

The Disbelieving Public

We accept without question today—as we do water and air—the telephone, railroads, the telegraph, electric light, radio, automobiles. But the care and feeding of these ideas had to overcome a resistance on the part of the public which simply passes belief. Samuel F. B. Morse took his telegraphic instrument to Congress and offered it *as a gift* to the people. The Post Office Department, the authority on communications, rejected it on the ground that it had "no practical value."

A great and respected New York newspaper once referred editorially to a man named Edison as the one who had the crazy notion that he could supplant gas lights with an electric doodad. About the same time, a proposal to equip London streets with the newly invented carbon lights was turned down in Parliament. When the committee chairman was asked whether he had consulted the American, Mr. Edison, he answered (and his reply is on record): "Mr. Edison has no scientific standing."

—Curtis H. Gager, in AMA's *Marketing Series* No. 96

signs up wherever an accident occurred. A typical sign might read something like this: "Injury No. 12 occurred here. Joe Johnson slipped on a grease spot, sprained his ankle."

6. Try to sell employees on the need for reporting "near misses" as well as actual accidents. It may seem to an inexperienced person that the cause of a near accident is something that will never happen again. But if the incident is reported and studied by a safety expert, it may reveal certain conditions that should be changed.

7. Have safety offenders prepare a written report stating what they should have done to avoid the accident. This may stop them from making the same mistake again. Also, don't forget that safety violators are choice candidates to serve on the safety committee.

8. At least one company is using a camera to take on-the-spot accident photos. The pictures make it possible to study the conditions that caused the accident, and can be posted on bulletin boards to dramatize the mishap.

9. As much as possible, try to get safety into the home. The truly safe worker has to make safety more or less a way of life. To develop interest in safety at home, one company publishes a safety quiz for employees' wives in the company magazine. At frequent intervals, a plant safety man picks one of the wives' names at random and phones her to see if she knows the answer to the safety question. If she does, she gets a $10 grocery order.

Supervisors can do a lot to reduce accident rates if they are aware of certain accident facts. For example, the supervisor in a small plant has to be particularly alert, because studies have shown that about two thirds of all on-the-job accidents take place in plants with less than 100 workers.

There are also accident "seasons" and accident "hours." Generally, more accidents occur in late summer and early fall, and during the hours just before lunch and just before quitting time.

Supervisors should also remember that new workers are a definite safety liability. Research by one of the big automakers showed that nearly half (46.5 per cent) of all its accidents were caused by workers who had been on the job less than a year.

There are also specific kinds of jobs that need close attention from the supervisor because they have built-in accident factors. For example, one study has shown that materials handling operations account for nearly 40 per cent of all on-the-job accidents. Repetitive jobs are also dangerous because they can become monotonous. The worker who is bored may be inattentive and, as a result, ripe for an accident. One solution to this problem is to try to break up the work by giving the employee other assignments or by having several workers take turns on the job.

Check up on your own safety know-how by taking the quiz on the following three pages.

1

Most on-the-job injuries for which compensation is paid result from contact with moving machinery parts. True or false?

2

If a grinding wheel breaks and doesn't strike anybody, it is an accident. True or false?

3

A description of the damage resulting from an accident is the all-important information needed on an accident report. True or false?

4

Carelessness is usually a good answer to the question of what was the cause of an accident. True or false?

5

The most frequently injured parts of the body in on-the-job accidents, except for the trunk, are the thumbs and fingers. True or false?

6

Sawdust and wood shavings are ideal to cover oil or grease spilled on the floor. True or false?

Safety I. Q.

Answers on Page 39

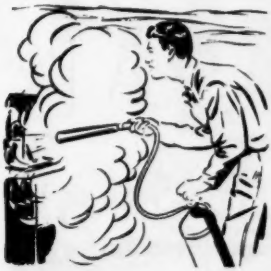
7

Name at least three of the major unsafe practices in using ladders.

8

In the use of oxyacetylene welding and cutting equipment, can you name three precautions that should be taken?

9



The effectiveness of hand fire extinguishers as a plant fire-prevention measure depends upon four important factors. Can you name three of these?

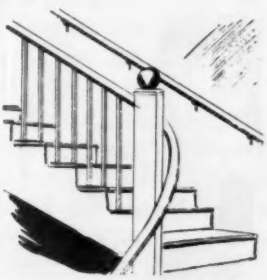
10

Acids and caustic alkalies most commonly used in industrial processes may cause injuries in four different ways. Can you name three out of four?

11

What three precautions should be taken to provide a safe spray painting operation?

12



Name three precautions that should be taken to reduce the number of accidents in the use of stairways.

From *Loss Control*, published by American Mutual Liability Insurance Co.

13

How many things can you find that are wrong in this picture from a safety angle?

14

Identify three things that are wrong in this picture.

15

Name at least three wrong actions in this scene.

16

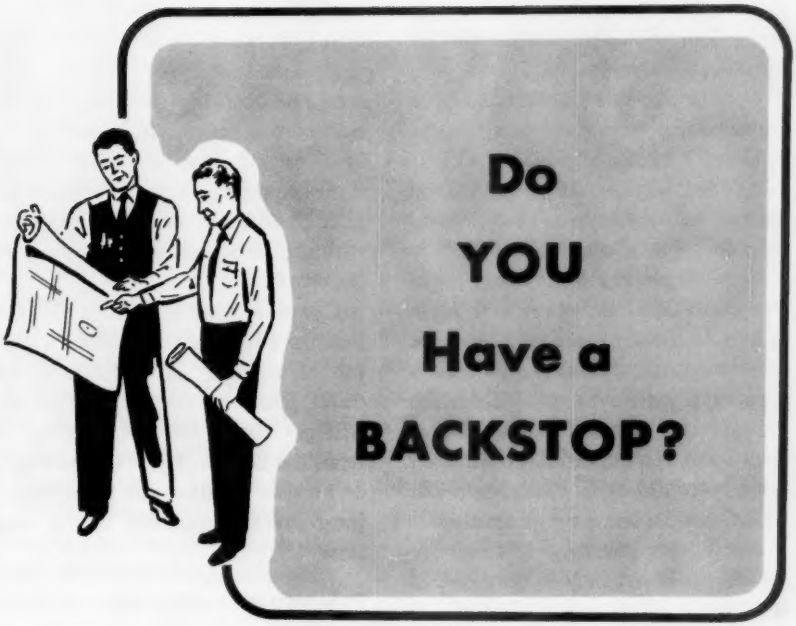
Name the wrong actions and conditions in this illustration.

17

List the things you see wrong in this illustration.

18

Name four things that are wrong in this picture.



In appraising a supervisor's performance, management often asks: Has he trained an understudy to take over his job?

PLANT SUPERINTENDENT Irvin Mussman flipped the folder closed and swiveled around to face foreman Gene Flynn.

"Well, Gene," he said, "that takes care of all the vacation schedules in your department—except yours."

"I don't like the way you said that." Flynn smiled uneasily and returned his pencil to his shirt pocket.

Mussman stared down at his ring, which he was turning slowly around his finger, then looked up. "You're right about that. Gene, I've pulled every string I can, and it comes out the same way—we just can't give you the extra time. The Brady contract job is going to hit your department for finishing about that time, and we haven't got anybody who can take over your job."

"Oh, no!" Flynn sagged back in his chair. "Helen's been planning this trip for four years," he said, "but without the extra time, we can't make it. She's going to skin me alive!"

"How about Fenton?" Mussman asked. "You think he could take over for you?"

"On the regular run, yes," Flynn said, "but not the Brady job. I wouldn't do that to him."

"Looks like you should have been doing some planning yourself, doesn't it, Gene?" Mussman said.

"Yeah," Flynn said as he pushed himself up out of the chair. "Fine time to think about it, isn't it?"

Nobody to take over. It's a problem that comes up again and again in industry, many times with far more serious results. Sickness hits and a supervisor has to be away from the job: nobody to take over. A supervisor misses an important promotion: nobody to take over. Everyone needs a backstop at one time or another.

But having someone to cover for you in an emergency is only one of the benefits of having a good understudy. In the process of training a man to be able to take over the job, the supervisor nearly always learns some things himself. He may get a much clearer view of his job in the process of explaining it, he is sure to learn more about the abilities of the people in his department, and he may learn some things about himself that he hadn't realized before.

Training an understudy will also result in better departmental relations. The supervisor who is doing the training will naturally be closer to the men in the department, and will seem more human than the man who acts as if he knows all the answers. The sense of responsibility that is built up in the department will result in a much more reliable workforce. The men will feel they have a stake in seeing that things run right. Also, the supervisor will be able to turn over many details to his understudy and spend more time in planning and working out programs for cost cutting, methods improvement, better scheduling, and all the other things that are vitally important but difficult to do because they interfere with the responsibility of getting out the work.

Coupled with all this is the fact that the supervisor who does a good job of training an understudy will develop his own executive ability and will get credit for the training job from the company. He can strengthen his own position and train himself for more responsibility at the same time.

Selecting an understudy

The first step in developing an understudy is to select the right person for the job. Obviously he should be a good worker and know the department's operations. But while these are important points, the biggest asset any candidate can have is the ability or potential to get along with people and get them to turn out the work willingly.

Training an understudy really involves taking a good worker and making him into a leader. If the candidate hasn't had a chance to demonstrate his ability to lead people, the supervisor can get a good indication of whether he has what it takes by watching how he fits into the work group: Does he handle his own problems in a reasonable, mature way, or does he fly off the handle? Does he get into discussions—or arguments?

How is he regarded by the other people in the group?

Other qualities to look for in a prospective understudy might include the following:

1. ***Ability to think.*** Does he have good judgment? Is he able to organize his job to get the most done with the minimum of effort? Does he try to solve problems that come up before asking for help?

2. ***Ambition.*** Does he have an open mind and is he willing to learn new ways of doing things? Is he interested in developing himself for bigger jobs? Is he a self-starter?

3. ***Perspective.*** Is he able to decide which things are important, which should be done first, which deserve the most attention? Is he able to budget his time well?

Many of these things will not be apparent if the candidate has been on a routine job, but most of them will show up during the actual training process. His willingness to take on responsibility will be put to the test by the extra work entailed in the training, as will his ability to think, plan, and organize.

Sometimes a supervisor has two or three good men in his department who seem to be equally eligible for extra training. The best thing to do in this case is to start them all out on an equal basis. If one has superior ability, it will show up in the training process. If they remain equal, the supervisor can train two or three understudies instead of one; a double or triple backstop is better than a single one.

"Training" is probably not the most exact word to describe the process of bringing an understudy up to full ability. A great deal of the understudy's advancement will come from his initiative in digging out his own facts and fitting himself for the job. The process isn't a three-day short course nor a two-month textbook study, either. Understudy training is a continuous, two-way program.

The procedures that can be used in an understudy training program are many and varied, and it's up to the supervisor to pick the ones that will work best with his particular understudy. Following are some of the methods that have worked for others:

1. *Let him in on the know.* This is a handy method for getting the basic fundamentals across. Show your understudy the ins and outs of the department's paper work. Explain the reports to him; show him how to get the facts; and tell him where each report goes, what's done with it, and why it's important.

Let him know the people you deal with—whom to contact and how to contact them. Introduce him to people he ought to know. Take him with you when you go out of the department to contact staff departments or on special problems.

Along this line, go over with him the function of the department as it fits into the whole company picture. Explain company structure and the roles of the various staff and executive departments.

2. *Outline the problems.* Let the understudy in on the problems that come up every day. Ask for his opin-

ion on how they can be solved. Later on, tell or show him how the problem was handled, and if his ideas were rejected, explain why. This is a three-way method that gives you help on the solution of a problem, a chance to evaluate the way he analyzes a problem, and a chance for him to learn what the supervisory job entails.

3. *Show him how to help himself.* This is a continuing method of training that will reveal the understudy's ambition. It should be started from the first; in fact, a good understudy will probably *ask you* where he can get more information. If you can, lend him books that have helped you, or give him the titles and tell him where he can get copies. Pass on trade magazines you receive, or see if the company will enter a subscription for him. Recommend correspondence schools, night-school courses, company-sponsored training, etc. Help him select the courses that will be of greatest benefit to him on the job.

Suggest activities outside work that will help him develop leadership abilities: chances to head committees, to do or learn public speaking, and to work with many different types of people. The more people he meets, the better he will understand them. Community activities will also help him develop self-confidence.

4. *Give him his head.* This is where the understudy gets actual experience on the job. Give him a problem to solve and let him dig out the facts and come up with a solution. Give him all the help he needs and, most important, act on his solution if it's workable. Beware of making the problem seem like "busy work," which is done just for practice. If his solution won't work, go over it with him and tell him why. If nothing is done immediately, tell him why there is a delay. Also, be sure to let the rest of the department know he's acting for you in digging out the facts; that will head off resentment on the part of the other workers and make it possible for him to get at the information he needs.

This problem-solving technique is a progressive process. At first, the understudy will be able to handle only simple problems and will need pretty constant supervision to make sure he doesn't go off on the wrong track, slow up the solution, and antagonize the people he deals with. As he gains experience, he will be able to handle more and more complex problems and will need less help from you in reaching the decision.

Another caution to observe in getting the understudy's help on problems is to make sure you don't overload him. Don't make it seem that you are passing the buck. Make sure he knows he's helping you, not doing your work.

5. *Develop his "people-consciousness."* This is a good subject for discussions between the supervisor and the understudy. The discussions may take place during breaks, lunch, or any odd moments. Nothing formal should be attempted, just general talk centering around human relations. One useful topic may be theoretical grievance cases, on which you compare thinking. Don't use actual cases

from the department or company that he may remember. General discussions of this kind can serve to sharpen his thinking about human relations, and at the same time strengthen his knowledge of company policies that apply to people.

6. *Let him represent you.* As the understudy gains confidence and progresses in his ability to handle the job, it's a good practice to try him out on your associates and superiors. Make sure he's letter-perfect on what he's trying to accomplish before he goes, and tell the other people he's coming. Don't spring him on them unprepared. This procedure is valuable for giving the understudy training in the intracompany relations necessary for the job and may also give you some valuable insight into what kind of training he needs. Others may be able to recommend extra training that will help.

Three cautions

In the early stages of training, keep a sharp watch on department morale. Make sure your selection of an understudy isn't interpreted as a "soft touch" for the man selected. Keep the whole department well informed until the man is accepted and recognized as an understudy.

During the first phases of training, make sure you spend enough time to lay the groundwork for good results. Don't make a big deal out of the selection and then drop the idea. Follow through by giving the job as much of your time and effort as you can.

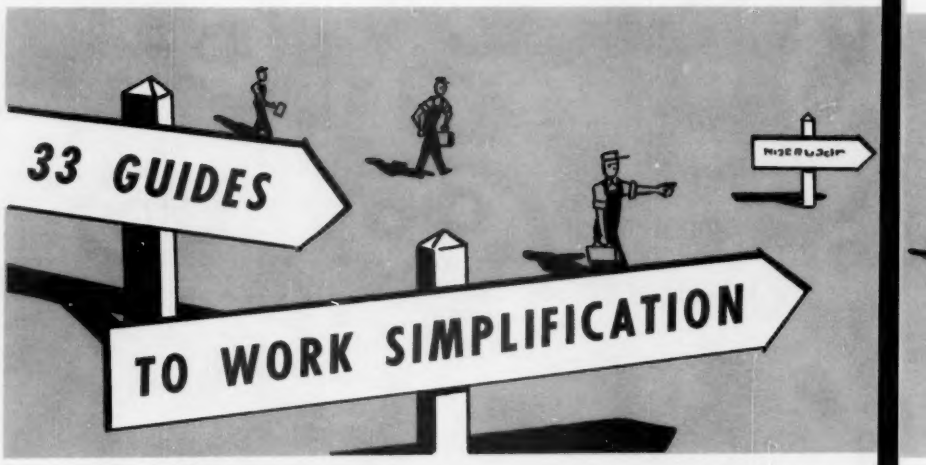
After the understudy gains enough knowledge and confidence to take over some of the details of your job, make sure you don't lose touch with them yourself. Don't use the understudy as a crutch, or he may become just that.

After your understudy nears the point where he can do the job alone, he may be transferred to another job requiring him to use that ability. It's always good practice to have another man "cut out of the pack" for understudy training. Everybody needs a backstop, and the best way to get one is to develop one yourself. ◆

The Cost of Human "Downtime"

Sickness absenteeism accounts for an estimated yearly loss of 400 to 500 million man-days in industry, according to the Office of Defense Mobilization. Reduced to its simplest terms, this means the equivalent of almost 2 million workers off the job for an entire year. The effect on production is evident in the impact on wages as well as profits. One rough estimate places the loss in workers' earnings through temporary disability at approximately $4.9 billion, with a corresponding loss of production. The indirect cost of absenteeism is estimated to run four or five times the direct cost.

Women are absent an average of 12 days a year, as compared with eight days for men. Women are out more frequently because of illness of short duration, but men have longer illnesses when they are sick. According to records of the U. S. Public Health Service, over one half of the absences and over one third of the days absent, for men and women alike, are attributable to the respiratory diseases, chiefly colds.



Here are some common-sense pointers to help make workers' jobs easier and pleasanter

WORK simplification is no longer the province of the experts. As the science of finding easier and better ways of doing work, it is everybody's business. In typical job shops, in the transportation and printing industries, in office and warehouse operations, in the home and on the farm, the application of the rules of work simplification will yield satisfying results to unions and management alike.

In what better way can you, as a supervisor, show your appreciation for your people than by making their jobs more enjoyable? There are many ways of doing this—for example, seeing that they have good ventilation, and rearranging their materials and tools in order to save their legs and arms unnecessary travel effort. Indeed, it is not impossible that jobs might be made so attractive that operators would prefer to go to work rather than to remain at home!

Common-sense application of the following guides to work simplification should enable any supervisor to achieve excellent results:

Basic principles

1. Eliminate all or part of the job, thus relieving the worker for more useful work elsewhere. Obviously, a farsighted supervisor will be reluctant to eliminate a job before he has another spot for the worker, preferably at the same or higher pay.

2. Combine two or more operations where possible. This is especially practical where an inspection is combined with an operation.

By Harold R. Nissley

3. Simplify the job to reduce running around and extra motions.

4. Do the job with the lowest possible class of motions. It is easier to use the fingers for light work than the hands; the hands are easier to move than the arms, the arms easier than the legs, and the legs easier than the trunk.

5. Locate all tools and materials within the maximum working area (circumscribed by the arcs of the hands in outstretched position); do as much work as possible within the normal working area (circumscribed by the arcs of the hands traversed by the arms when pivoting at the elbows).

6. See that tools and materials are prepositioned wherever possible. (How much time have you wasted in searching for a straight edge or pencil at home or in the shop?)

7. Do not use the hand as a holding device; it should be reserved for more important work.

8. Use drop deliveries wherever possible, thus eliminating put-away reaches.

9. Have both hands do useful work; and, as far as possible, have them do the same thing at the same time.

10. Relieve the hands of work that can be done by the feet (pedals, floor switches, etc.).

11. Rhythmical and curved motions are easier than jerky, reciprocating motions. Balance motions wherever practical. The two hands may appear to be working, but close study may reveal they are not working at the same time and hence are really idle during part of the work cycle.

12. Eliminate or reduce reaching.

13. Eliminate or reduce interruptions. Are there delays in the delivery of material to the operator?

14. Can space be saved by more economical layout and shelves at the workplace?

15. Is the machine in good condition?

16. Can the machine speed be increased without overworking the operator?

17. What has been done to reduce unnecessary delays?

18. Use ejectors wherever possible, especially for put aways.

19. Can the make-ready or setup time be reduced?

20. Can the work sequence be changed?

Adapted from *Machine and Tool Bluebook* (Hitchcock Publishing Co., Wheaton, Ill.).

21. Are there any safety hazards on the job?

22. Do you know positively that the material is being utilized to the fullest possible extent?

Operator comfort

23. Can back strain be relieved by raising materials to elbow height or by making use of lift trucks or hoists?

24. Does the worker have a genuine adjustable posture chair? Can he make the adjustments to suit himself quickly and easily? Is it a safe chair? Does it conform to the contours of the body and back?

25. Is the lighting of the proper intensity and quality? How do you know?

26. What light paints have you used to make the new job attractive? What help did you have in selecting these colors?

27. Are fans and other ventilating devices adequate? Or do most of the operators continue to sweat it out under the new setup?

Psychological

The day is past when management can change a pulley at five o'clock Friday afternoon and expect the worker to be happy the following Monday morning. Unless, therefore, the following principles of conduct are observed, the very best ideas for improvement will have tough sledding.

28. Sell the boss. Make sure the necessary approvals have been obtained.

29. Sell the operator from the very beginning.

30. Give credit where due—generous, sincere credit.

31. Remember that people resent criticism. Wrong: "That's a crazy way of doing that." Better: "Can you think of a better way of doing that?"

32. Remember that people resist change. Wrong: "Next week I'll expect you to double your production." Better: "Do you think you can produce ten per cent more next week and perhaps keep this up for ten weeks?"

33. Remember that people resist new ideas. Wrong: "Look how much easier it is to do it this way than the way you are now doing it!" Better: "There must be an easier way of doing this; suppose we both think about it until tomorrow."

Willa Cather once said, "Man is the only animal that fights to stay in a rut." Someone else said that the birth of a new idea is the most painful of all human experiences. These truths must be well understood before the attempt is made to secure the savings and other benefits that work simplification can bring. ◆

When you know men and you know how to handle men, you've licked the problem of running a business. The executive's job is to provide leadership, the kind of leadership that develops the best efforts of the men under him. He can't do that if he shuts himself up in his office. He has to get out and get acquainted with his men.

—Roy W. Moore

Song of a Successful Secretary

I don't have to say that my grandmother died
  If I want to turn out for the Giants;
My boss won't grumble, my boss won't chide,
  I've got it down to a science!
I don't have to faint, or resort to tears,
  Or use any feminine wiles–
They *can't* fire me–for the past two years
  I've been keeping the office files.

Yes, I have a system that's all my own,
And it can't be explained and it can't be shown.
I file by number, I file by letter,
I file by ways that are ten times better,
I file by subject, I file by date,
I file by city, I file by state.
I shun the trite, and I scorn conventions,
My filing system has four dimensions.
I regard "In re" at the top of a letter
As something to make it balance better;
I pay no attention to underlining
And seldom get down to the person signing.
I've got the names of the firm's officials
Neatly arranged by their middle initials;
Customers' letters I've filed instead
By the color and size of their letterhead.

I'm the indispensable employee,
  They can't take a step without me;
And it costs them a raise and half-day free
  Every time they attempt to flout me.
So they *can't* fire me, no matter how cross,
  No matter how mean and riling!
I'm Garbo herself–I'm the boss's boss,
  For I take care of the filing.

–Elizabeth Ann Christman

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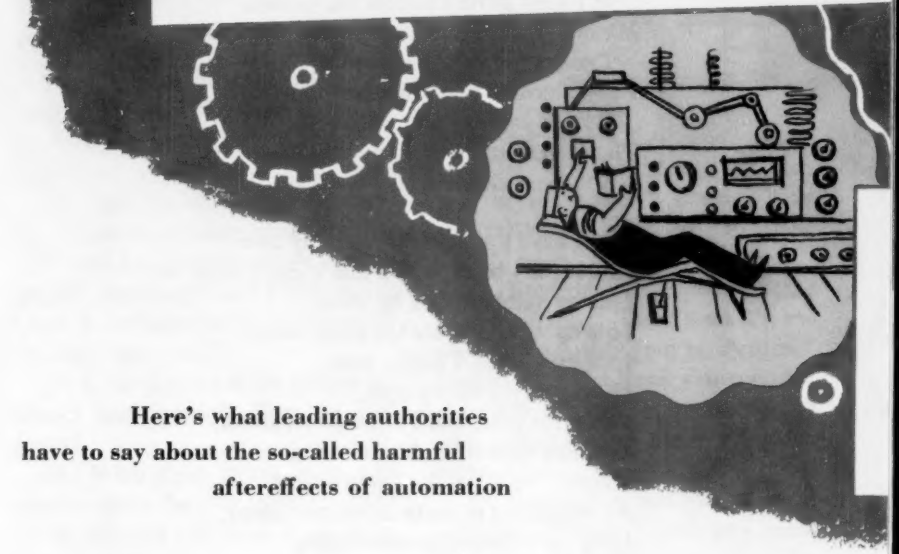
What Automation Will—



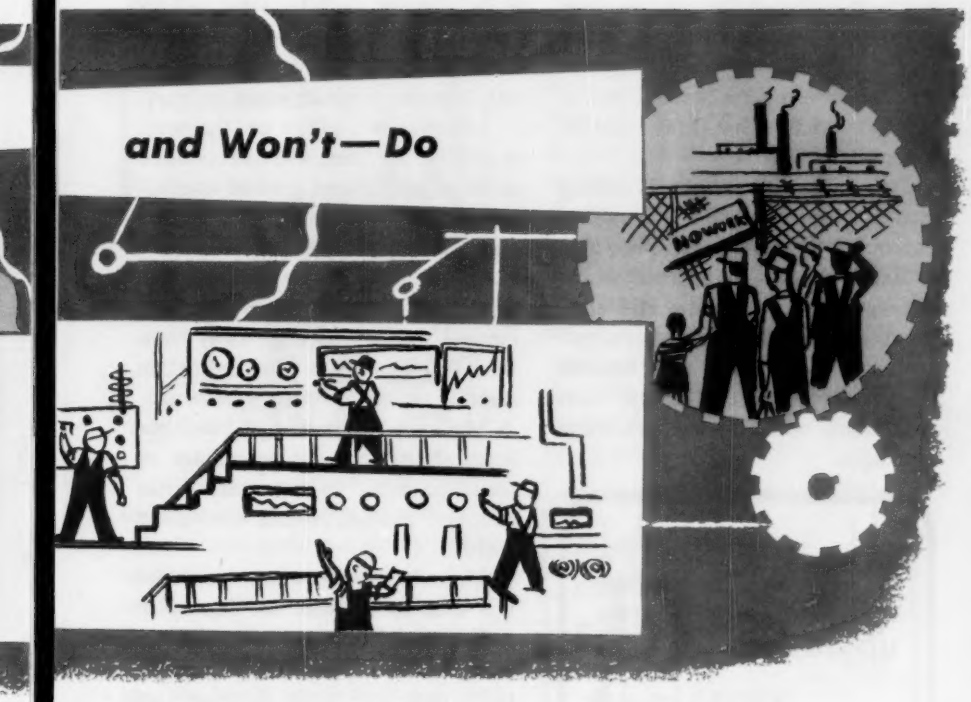
Here's what leading authorities have to say about the so-called harmful aftereffects of automation

AUTOMATION has received a lot of publicity in recent months—and has become something of a bugaboo. What will it mean? On one hand, we have starry-eyed prophets glibly describing a new era of peopleless, push-button plants and offices; on the other hand, gloomy "realists" predict rapidly approaching unemployment and depression as a result of technological advances.

Neither view gives an accurate idea either of the present status of automation or of the prospects for the future. A third view – that automation will create only a mild ripple, after all—is not accurate either. There will be changes, in types of jobs as well as manner of work, and there will be temporary dislocations, requiring new attitudes on the part of some employees and sometimes change of work. But these dislocations will be neither widespread nor permanent. They will be absorbed, to a great extent, by the natural turnover in the total workforce and by new industries and demands created by automation itself.

Following is a roundup of authoritative opinions which present sound, basic reasons why automation does not represent a threat to the nation's employment or to the enonomic structure of the country.

Actually, the principles behind



automation are not new at all. About 150 years ago, a man named J. M. Jacquard invented a loom that was controlled by punch cards. In 1784, a completely automatic mill was in operation outside Philadelphia. Built by Oliver Evans, the mill could handle the complete flour-making process without human aid, from unloading grain from the barge to production of the finished flour.

Much attention has been focused recently on tremendous advances made in specific applications of automation – mechanical marvels that do the work of several men, or electronic computers that "think" in millionths of a second. Aided by the happy praise poured on the machines by their inventors and developers, it isn't hard to arrive at the conclusion that automation will soon be gobbling up jobs by the hundreds. However, things won't work that way for several important reasons – and one of the most important is cost.

Automatic machinery is very expensive to build and develop. It has been estimated that about $100,000 per worker will have to be invested to bring about any widespread automation into our economy. This estimate, made by Haig Babian in *Challenge* magazine, is compared to the 1951 investment of $10,829 per worker invested in machinery. The total in-

vestment required for country-wide automation would come to somewhere around $1,400,000,000,000, Mr. Babian estimates, and, he points out, "Money like that cannot just be picked off of trees."

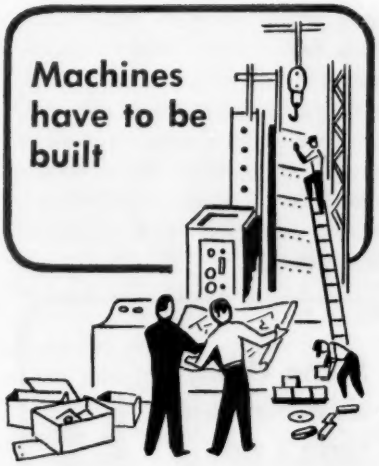
Time magazine mentions a milling machine that is flexible enough to turn out 150 products. The price tag? $400,000, Stories telling about single installations of automatic and electronic equipment running from half a million dollars up have become fairly commonplace. Clearly, total automation won't be mushrooming overnight.

Much of the fear about eliminated jobs comes about from what John Diebold, editor of *Automatic Control* magazine, refers to as "obituary accounting"– describing new machines in terms of how many workers they replace. This type of summing up doesn't take into account the fact that automatic machines are built to increase *output per worker*. In other words, if five men do a job and somebody brings in a machine that will do the work of five men, the five are not eliminated; they are just able to turn out 25 times as much work.

Automation's effect on the total workforce has been, and will continue to be, a general and gradual upgrading of the workers. The jobs that will be eliminated by automatic machinery include the monotonous, repetitive types of production and clerical work. This shift away from unskilled labor has been going on steadily as our technology advances. A McGraw-Hill survey of the labor force shows that the percentage of unskilled labor in the country has dropped almost 10 per cent since 1930.

The advent of the new machines will tend to increase the dignity of the workers. Instead of being "human automatons," performing physical tasks over and over thousands of times, they will become "machine tenders," using their brains to keep the cogwheels of automation going.

This process will tend to place a higher premium on skill, rather than deskilling jobs. Burnham Finney, in *American Machinist,* points out that work crews will be of better-than-average skill–and to lead them, the supervisor will have to have better-than-average skill himself. For example, Mr. Finney mentions that in the highly automated engine plant at Ford, there is a foreman for every 18 workers, where before there had been one foreman for every 31 workers. Automation will require closer supervision of the work and the workers.



One of the answers to where workers will go under automation is that the automatic machinery will be needed in great quantities, and workers will be needed to build it. Even after it is installed, it will take careful, intelligent, and skilled maintenance work, which calls for even more trained workers. Union leaders quoted by *Control Engineering* magazine seem to view automation calmly, for the most part. AFL Machinists view the situation happily, with the comment, "Machinists make the machines," while the secretary-treasurer of the AFL Office Workers, Paul R. Hutchings, has the attitude that where two employees are let out for a machine, two others will be needed to care for it. Main concern of the labor leaders, the magazine found, was what will happen to displaced workers. It is clear that the problem will receive a lot of attention from both unions and management as automation progresses.

The Biddle Survey predicts that automation and the construction of automatic machinery "may eventually surpass the automobile as the giant in U. S. industry. By then, it will probably have absorbed all the mechanics displaced in the automobile industry—and still not be able to cover its own needs for skilled labor." In the words of *Time* magazine: "Only a fraction of the 17 million Americans who work in manufacturing industries are in any immediate danger of losing their jobs to machines. And the business of making and servicing the new machines would take up most of the slack."

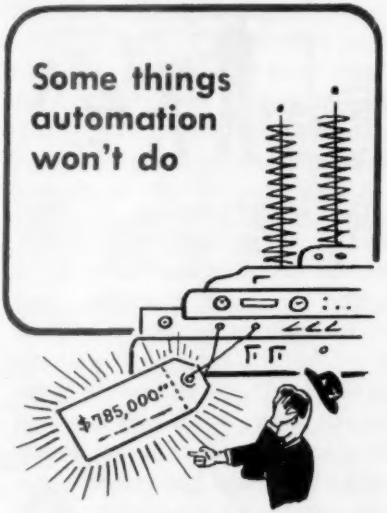
If automation enables workers to do more work and turn out more goods in a shorter time, the result would seem to be more leisure for workers. Even now shorter work weeks are being pushed, with 30- and 35-hour work weeks predicted for the next decade.

With this new time to spend out-

side work, the question becomes, What will people do with it? John Diebold provides a good explanation for this: "Since we have what is perhaps the most dynamic and productive economy the world has ever known, our needs increase continually. As we satisfy our material needs for food, clothing, and shelter, we shall find that we have created new, uniquely human needs – needs for books, art, travel, music, sports, and leisure." These "leisure industries" will require increasing numbers of workers to man them.

Actually, when you figure how much we will have to produce to supply our standard of living to the increasing population, automation will have a pretty hard job doing enough extra work to keep up with the demand. Carroll W. Boyce, in *Factory Management and Maintenance,* estimates that we will have to produce a total of $858 billion worth of goods and services in 1975. If present production trends continue, he says, each worker will be able to produce about $10,150 worth of goods a year then. That means we'll need 84 million workers. "That looks like a good prospect for full employment when it's stacked up against the 78 to 86 million people who will probably want jobs at that time," Mr. Boyce continues.

Those figures, Mr. Boyce points out, refer to our present standard of living. If we want to increase our standard of living at the rate it has been increasing since 1940, automation will have to "eliminate" about 30 million jobs–just to keep up. Also, if we want a shorter work week, automation will have to "destroy" an additional 9 million to 21 million jobs, Mr. Boyce concludes. In other words, even if automation does the work of from 39 million to 51 million people in the next 20 years, we still have a pretty good chance to maintain full employment.



Some of the predictions of the dire effects of automation are based on what is theoretically possible with automation, not what is practical. Many types of work aren't adaptable to automation.

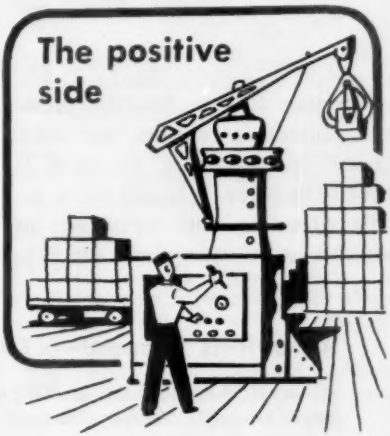
Nation's Business quotes automation expert Robert L. Henry on this phase of automation: "There is fear that technical people plan some mass envelopment of the population. That's inconceivable. There is a vast chasm between what can be done and what will be done in automation. The reason we have automation at all, or don't, is economic. Nobody is

doing it for curiosity or patriotic reasons. Automation isn't an end in itself. It doesn't necessarily mean reduced cost or a better process. Generally, the objective is to increase the productivity of human labor."

Automation imposes some restrictions of its own. The main one, of course, is the high cost – but the cost itself is made much more of a risk by automation. Peter F. Drucker, noted economist, pointed out this risk in a recent speech:

"Automation requires that production be fairly constant, or at least move within a fairly narrow range, over fairly long periods of time. This means that business can no longer adjust to economic fluctuations, at least not to short-run ones, by adjusting production. . . . Automation means tremendous new risks – risks which will require of us in management very much greater competence. Automation requires – as all those industries that have come close to it, such as the petroleum industry, have found out – that a capital investment, once taken, must be carried through regardless of business conditions. You cannot tinker with one part of the plant without also making the resulting changes in all the other parts. You cannot begin building a plant without finishing it. You cannot improve one part of the process; you have to improve the entire process. If you stop midway, if you try to adjust your capital-investment program to your reading of the business cycle or to the fluctuations in your own cash income, you run the severe risk of damaging the investment you have already made to the point where you may lose it altogether."

Another point that may affect the establishment of automation in some areas is that model changes will be difficult to make. Once set in motion, automation machinery will turn out the product it is manufactured to make. Retooling for new models will be a tremendously more complicated and expensive task than it now is.



Automation does have a great many advantages, from a worker's point of view. Aside from eliminating monotonous jobs and making work more interesting, automation also brings about a tremendous increase in safety. Ford's automated plant showed an 85.5 per cent reduction in hernias after conversion to automation. Automatic controls will eliminate the possibility of crushed fingers and toes in loading and unloading machines, and will enable much closer control of dangerous processes, such as those involving tremendous heat or explosives.

Progress to date in instrumentation, automatic controls, and automated manufacturing processes is hard to measure. It is difficult to decide where to start measuring, or what to measure against, for who knows how much will finally be done? In estimating how far we have gone with our instrumentation potential, Henry F. Dever says he thinks "we are only nicely started. We may be 10 or 20 per cent along the way."

As to what is coming, James H. Collins covered the subject very nicely in a recent issue of *Public Utilities Fortnightly:* "Recently, the engineers of a large control-instrument company did some imaginative figuring on an electronic brain that would be as good as a human brain. It would take the Pentagon to house it, they reported, the waters of the Mississippi to cool it, and the power load of a large city to run it. 'Some day,' they concluded, 'the most elaborate electronic brain may be as good as the brain of an ant.' " ◆

A Savings Account—of Intangibles

Said a retired businessman, speaking the other day to a luncheon of his young former associates: "You look forward to retirement. But can you look forward to independence? I don't mean freedom from material want. I mean independence from the things you will find you can no longer have.

"You will be comfortably well off. But will you have anything that cannot be bought? You can if you will start now to accumulate and save that kind of thing. I wish somebody had advised me to begin gathering it at your age.

"That is the ability to enjoy yourself *by yourself.* For you will be on your own when you retire in a way that will surprise you. Your former associates, with all the good intentions in the world, will no longer have time to ask you to lunch, to seek your advice, to solicit your help. There will be little or no opportunity for you to find the kind of activity in which you are skilled and which it gives you such real pleasure to exercise; there are too many other old so-an-so's like me and too few jobs as consultants or advisors to active business. If you have come to depend on business friendships or on the excitement of business, you will be done.

"Begin *now* to acquire tastes outside business and even outside family: hobbies, knowledges, skills, interests in literature or the arts or the sciences. . . . Then when you retire you will have real independence. For you will be able to say with Gibbon, 'I was never less alone than when by myself.' "

—*Management Briefs* (Rogers, Slade and Hill) No. 72

Answers to Safety Quiz

Pages 20–22

1 False. According to the National Safety Council, 16 per cent of all disabilities are caused by the injured person's coming in contact with moving machinery such as gears and sprockets, or at the point of operation where the tool works on the material. However, the ratio varies by industry, and such injuries are usually serious.

2 True. An accident is an unplanned or unforeseen occurrence. It is important that all accidents be prevented, otherwise people will be injured or property damaged—perhaps the very next time.

3 False. The primary purpose of detecting accident causes is to prevent future accidents, not to find out who is to blame. The "why" and "how," not the "who," are the most important factors.

4 False. The term "carelessness" is a concealing answer, hiding the real cause of an accident. It is of no use whatsoever in accident prevention. An accident should be investigated and the facts thought through so that specific causes can be given.

5 True. These important grasping and manipulating members of the body do much of the day's work, and therefore need thought and protection to keep them safe.

6 False. Both sawdust and wood shavings create a slippery surface hazard when soaked. They also are a fire hazard.

7 Placing ladder on insecure foundation; reaching too far out to side; climbing too high; incorrect angle.

8 Protect eyes with #6- or #8-shade safety goggles or welder's hood; warn nearby workers not to look at flame; remove combustible materials from the work area or protect same with noncombustible covering; have fire extinguisher at hand; shut cylinder valves when the job is finished or delayed.

9 Selection of the right type of extinguisher; correct location of extinguisher; regular inspection and maintenance; proper training of workers in the use of fire extinguishers.

10 Burning of skin and eyes; suffocation and/or asphyxiation; poisoning when taken internally; fire or explosion.

11 Effective exhaust ventilation; good housekeeping and maintenance; proper electrical equipment; protective equipment and clothing.

12 Use of handrails; proper maintenance; good lighting; good housekeeping; no rushing and crowding on stairways.

13 Man carrying boxes has vision obscured; a worker is picking up material incorrectly; the hand truck is improperly loaded; overhang of ladder may strike someone.

14 Operator not looking at what he is doing; loose sleeves; oil on the floor; no fire extinguisher in rack.

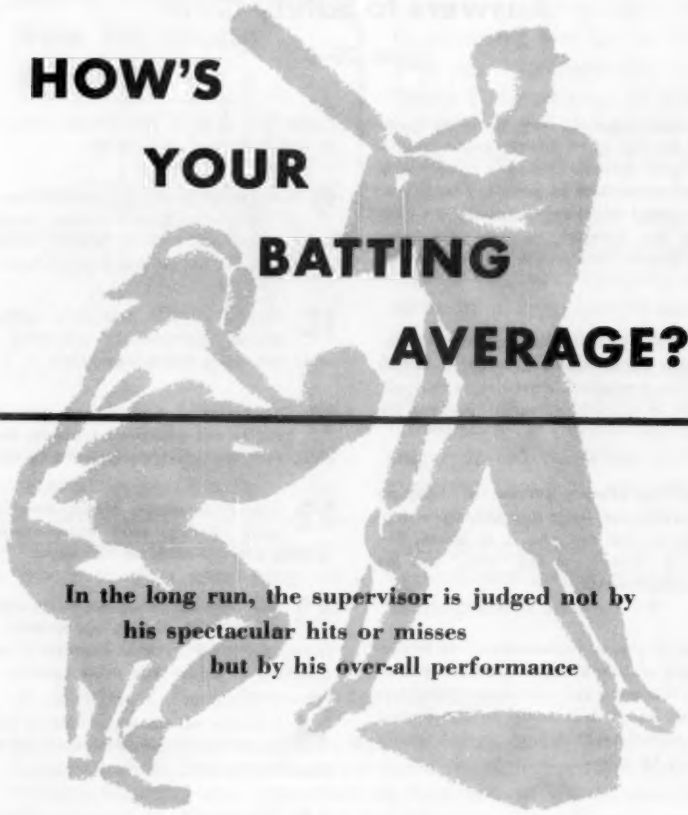
15 Overhead crane moving a load over workers' heads; the load is insecure; the crane operator is knocking ashes out of his pipe from the control cab; another worker is not looking where he is going.

16 Poor location of ladder; two workers incorrectly lifting an injured worker onto stretcher; worker with unsupported heavy portable drill; open gasoline can.

17 A mechanic using tools improperly; tools and guard are scattered on the floor; the floor board is broken; work area is not clear of scraps or chips.

18 Grinding operator not wearing goggles; poor stacking of materials; fire extinguishers not accessible; unprotected electric-light bulb too close to work position.

HOW'S YOUR BATTING AVERAGE?



In the long run, the supervisor is judged not by his spectacular hits or misses but by his over-all performance

By Herbert F. Goodwin

Assistant Professor of Industrial Management
Massachusetts Institute of Technology

"WHICH would you rather have —a good job with a poor boss, or a poor job with a good boss?" Whiting Williams, noted author and lecturer on human relations subjects, has asked this question of numerous workers, supervisors, and executives. The answer, he states, is always the same: "There is no such thing as a good job with a poor boss, or a poor job with a good boss. A good manager makes working for him a good job."

Both Mr. Williams' question and

the answer recognize the importance of a good boss to any job. But what makes a manager "good"? What is that extra something that seems to separate the men from the boys? What qualities does a man need to be a good manager?

Opportunities to observe come frequently for me, yet I never cease to marvel at the apparent ease with which the good manager accomplishes so much. He makes it look easy. Potential hours of fretting melt into moments of effective action. How come? What's his secret?

Perhaps out of the voluminous records and statistics of our national pastime, we can develop a definition that will give us a revealing comparison:

"A good batter in baseball is one who hits all kinds of pitching well and is at his best with men on base in a close game." Notice that the emphasis here isn't on crowd-pleasing antics or absolute perfection in batting. Even as one of the best, he doesn't get a hit every time. He becomes a good batter as he improves his average under the onslaught of every kind of trick throw pitchers can come up with and the tight play of a close game.

Let's apply this description of a good batter to the job of managing. The result might be something like this:

"A good manager is a manager who takes appropriate action to achieve the effective solution of all kinds of problems as the situation arises, with an acute sense of timing for the importance of each."

If we dig deeper into what a few of these phrases mean, we may gain an even better idea of what it takes to be a good manager:

Appropriate action. A good manager is cool when the going is roughest. He doesn't press. He knows what to do because he has done it before in similar situations. He understands his organization and recognizes its abilities. He gives this potential an opportunity to be useful by organizing to do so. He respects the people involved—their feelings, ambitions, and needs—fully realizing that they are his most important asset and that he must attain his results through them. He knows that sometimes no action is the best action. He never hesitates to make the final decision and stand by it as his own responsibility.

Achieves the effective solution. A good manager is a master of methods. He knows how to guide, motivate, and stimulate. He acts as a catalyst in getting the proper reaction between men and work. He leads others to their best effort. He utilizes all the brains that are economically available. He is patient in spite of the personal pressures on him. He realizes that effective solutions are those that are applied with swiftness and enthusiasm by the people involved.

All kinds of problems. A good manager knows there is a difference between a situation and a problem. He gets the facts necessary to distinguish one from the other and builds his organization to do the same. He outlines each problem in

terms of the leadership and abilities required for its effective solution and assigns it to the right people.

As the situation arises. A good manager recognizes the existence of situations and anticipates the needs they bring on. He raises the sights of the organization to a level that will meet future needs without losing sight of the present. He has a long-range vision of the whole.

An acute sense of timing. A good manager is skillful at getting at the core of each situation. He has a feel or touch for the human relations involved, of the delicate balance between people. He quickly finds the correct order of procedure, with the things that must be done first taking highest priority. He is a busy man with plenty of time for the activities that require his personal attention.

The importance of each. A good manager senses in each situation the degree of its importance to the company and its owners, to the people under his supervision, to the community, and to himself. He knows his costs and has the ability to recognize and evaluate the various alternatives. He has a sense of urgency and is willing to accept a good course of action even if it falls somewhat short of perfection. He expects a high batting average, not a perfect one.

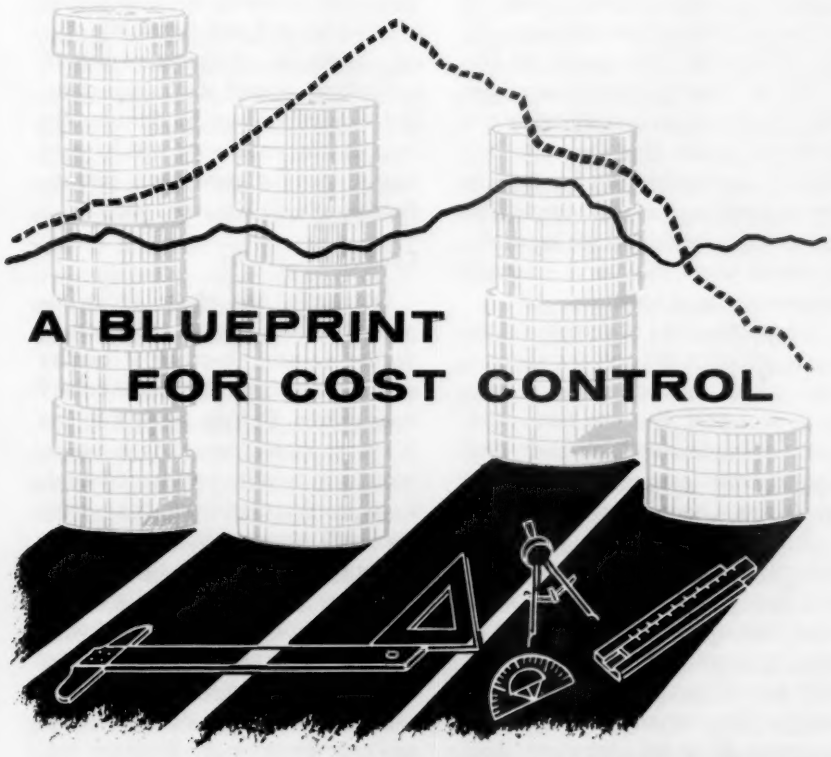
Of course, the meanings applied here are just one set of the many that are possible. It may be that you would change some of them, or take issue with some of the implications. By all means do so. Even change the words themselves if it will more nearly express what you feel a good manager should be. The fact remains that just as there is a shortage of good batters in baseball, so there is a shortage of good managers in business and industry. And the important thing in either case is the steady average of hits in any situation that arises. ◆

Like a motorist consulting a road map, management must occasionally pull over to the side of the road to see where it is going. Big things are easy to see, but it takes patience and long perseverance to keep after the little things. Anybody can see a break in the water main when it blows the pavement ten feet in the air, but it takes discerning management to detect the little leaks that can undermine a business. Even a one-dollar bill is gross profit—if you don't spend it unnecessarily.

—Warren C. MacFarlane, at an AMA Manufacturing Conference

Among the more foolhardy endeavors known are those which involve giving a man advice as to what stock to buy, which girl to marry, and how he should distribute his product. In each case, your position is untenable. The subject of your advice gives you no credit if you're right; gives you the blame if you're wrong; and ultimately resents your intrusion into his affairs. And, what's more, he usually knows more about his problem than you do and is in a better position to judge the emotional and personal aspects of the situation.

—Robert W. Lear, in AMA's *Marketing Series* No. 98



A BLUEPRINT FOR COST CONTROL

By Robert P. Neuschel
McKinsey & Company

No one thing will reduce costs very much alone; it takes an attack on a wide front. Here are a wide variety of possible approaches—and they all hinge on the supervisor

FRONT-LINE supervisors are the key people in any cost-reduction program for the simple reason that in most cases they have direct control over more than half of their companies' operating costs. It's the supervisor who deals directly with the people who earn the wages, who build the product, and who waste the materials. That's why he's in an ideal spot to keep costs under control.

But being in the right spot isn't enough. The supervisor won't really be able to do anything about keeping

costs down until he has created an atmosphere of cost-consciousness in his department. This means he has to set an example for those under him. He has to do everything he can to make certain that the costs he's directly responsible for are kept as low as possible. And more important, he has to make the people in his department know that he is sincerely concerned about costs.

Under the press of getting out the work, it's often difficult for a supervisor to put as much stress on costs as is necessary. But one fact is certain: if employees think their boss doesn't really care about costs, they won't give a hoot about them either.

Before a supervisor can put a cost-reduction program into effect, he has to know where he's going — know what operations will be the best targets for a cost-reduction drive. The only way he can determine this is to analyze the over-all costs of his department in detail, breaking them down into their three main elements: direct labor, indirect labor and other overhead costs, and materials.

The importance of these three elements varies from industry to industry. For example, in oil-refining and -blending operations, material costs make up more than 80 per cent of the total cost, while direct labor is relatively unimportant. However, in radio- and television-set manufacturing, direct labor may run as high as 30 per cent of the total cost, which makes it a prime target for cost reduction.

Once the supervisor has the cost figures on labor, indirect labor, overhead, and materials, the next step is to break up each cost factor into specific items. By analyzing each item and asking himself if it's important, and if anything can be done to cut its cost, the supervisor will have at least pinpointed areas where cost reduction will do the most good.

Controlling quality

Obviously, one of the most important tools in cost reduction is quality control, because if quality isn't what it should be, the company loses money. Defects are just dollars down the drain. Even though a company may have a well-staffed quality control department, the supervisor still plays a vital part in controlling quality; for he's the one who motivates and trains the workers, and in addition, he probably knows the machines and processes better than anyone else. Here's what the supervisor can do to decide whether an improvement in quality is needed:

1. Put quality in the right perspective: determine how important quality actually is in the particular operations involved.

2. Determine how much would be saved if there were no defects in a particular operation. This is the maximum saving that can be achieved by improving quality.

3. Estimate what percentage of defects is likely to be eliminated if a change is made in the process.

4. Try to determine whether an improvement in quality would have a favorable effect on customers.

If as a result of this kind of study, the supervisor decides that it would

be worthwhile to try to improve quality, he should get the assistance of other departments: the accounting department to supply cost data, the sales department to check the competitive need for an improvement in quality, the quality control department for technical assistance and to measure quality levels, and the engineering department to work out the mechanics of any changes that might be necessary.

Work simplification

Another important factor in cost reduction is work simplification — something the supervisor should be thinking about all the time, whether as part of a cost-reduction drive or not. Here are some guides on how to tackle the work simplification problem:

1. Locate the jobs that need to be improved: bottleneck jobs, jobs requiring materials and tools that must be assembled from several sources, jobs that waste materials, and jobs that involve high costs.

2. Analyze the jobs by breaking them up into their three basic parts: make ready or setup; operations in which production work is performed (which frequently amounts to less than 50 per cent of the time the total job takes); and put away, discard, and cleanup.

3. Try to improve the make-ready and put-away elements first. These are the unproductive parts of the job and are usually the easiest to improve.

4. Make a detailed breakdown of the job. Outline it on paper. Identify what happens at each step, such as transportation, storage, inspection, delay, etc., and find out how much time each step takes.

5. Question every detail. Ask yourself these questions: Why is it necessary? Can it be eliminated or combined? Can it be mechanized? Is the equipment that's being used suitable?

By following this outline, a supervisor should have a fairly good idea of how to go about simplifying a job.

Materials handling

An area that needs particularly close study when it comes to method streamlining is materials handling, since it's pretty generally accepted that on the average more than 25 per cent of the total wage bill goes for materials handling. Specifically, here's how the supervisor can go about cutting the cost of materials handling operations in his department:

1. Identify the different materials handling operations that take place in the department.

2. Analyze the movement of major products. Are work areas in the department located so that the distance goods have to travel from one operation to the next is as short as possible? Does the arrangement of work areas within the department cause confusing cross traffic? Is the stock room located conveniently in relation to the production areas?

3. For a production department, check the following:

a. Do skilled workers handle ma-

terials or heavy dies or parts?

b. Are delicate parts often damaged in transit?
c. Is the production area cluttered with parts waiting to be moved?
d. How long do handlers have to wait for elevators?
e. How are materials moved from one machine to another and how are they lifted to working level?
f. How is scrap removed?
g. Are aisles clear and does traffic move smoothly?
h. Is good use made of storage space? Are products stored to the maximum height possible?
i. Are products stored in easily handled form and in units in which they will be shipped?
j. Is the flow of materials generally in a straight line or is there a lot of backtracking?

4. In a receiving department, check to see whether materials that are being unloaded by hand can be unloaded mechanically. Would the savings that might result from this change be enough to make a switch to mechanical equipment worthwhile? Also check to see whether a lot of parts are lying around waiting to be put in storage. How many times are materials moved while in the receiving department?

Scheduling

Scheduling is another area where costs can usually be cut. Here the supervisor's job is often that of merely keeping other departments up-to-date on what's happening. For example, the production control department should be informed immediately if there are any problems that may mean missing a promised delivery date. Similarly, production control should be notified whenever equipment is idle.

The supervisor should also work closely with the maintenance department, keeping it informed of any poorly functioning machinery, so that equipment failures can be reduced.

When it comes to work scheduling in his department, the supervisor can, of course, make a more direct contribution. He has to make certain that work is assigned to the machines that are best suited for the job. Factors that have to be considered in determining which machines to use are cost, quality, and delivery promises. In the same way, the supervisor should match the workers with the skills required by the different jobs, and should watch to see whether the schedule results in workers' having to wait between job assignments. Overtime should also be analyzed carefully. Could some of it be eliminated by tighter scheduling?

In-process inventories are another factor to be considered in any cost-reduction program. Often these inventories are maintained at a fairly high level to eliminate the risk of running out of parts. But this feeling of security may be costing the company too high a price; entirely too much money may be tied up in in-process inventories which tighter shop control can reduce considerably.

To keep in-process inventories as low as possible, the supervisor should check bottleneck operations, because these help cause inflated inventories. Is there a slowdown due to unequal capacity among machines in different work centers? Is there inadequate control of quality within certain work areas? Is there a lack of information on production that makes it impossible to set up a tight machine-loading schedule?

Another factor that may be forcing a company to keep higher than needed in-process inventories is a slow flow of products or materials because of poorly conceived department layout or a lack of handling equipment. Or perhaps the trouble is in order control. Is the department handling too many half-completed orders instead of concentrating on fewer orders and completing more shipments? Are the job lots too large, causing work to be tied up in the department too long?

Putting the program over

One factor that isn't usually included in a cost-reduction outline is how to put the program over. And this isn't easy. The odds are heavy that there will be employee resistance to the changes that may be necessary. It's human nature to resist change, and in most cases cost-reduction measures force people to change their methods and work habits. It's not an easy problem to handle, but it has to be worked out; for not even the most effective cost-reduction program is going to work unless it has the support of the workers who make or break it. Here are some suggestions on how a supervisor can go about overcoming the resistance problem:

1. Discuss the cost reduction with the people in the department. Ask them for their ideas.

2. Don't criticize the way workers or the union have been operating in the past. Explain the changes that are to be made in a quiet, firm manner.

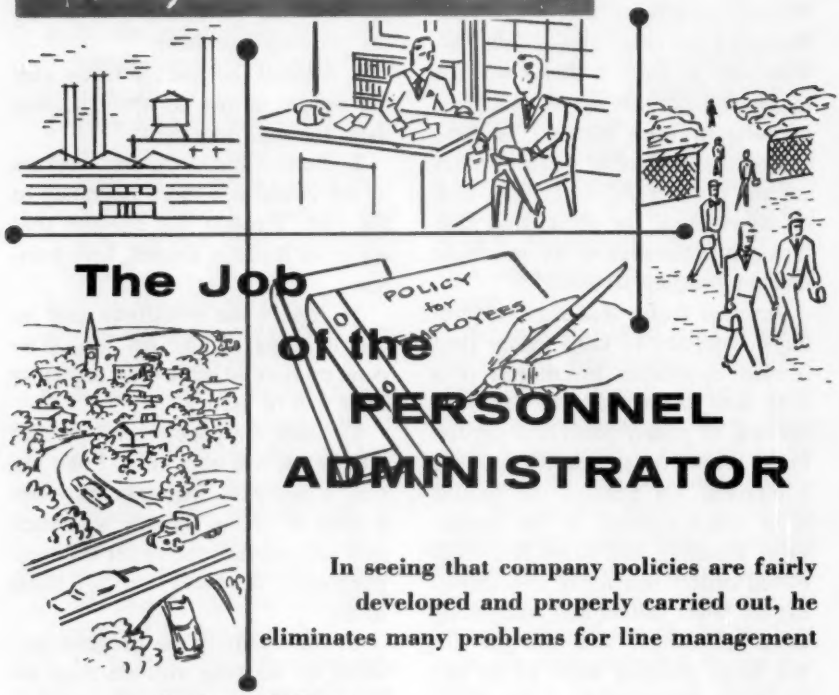
3. Assure the workforce that no one is going to lose his job. (Depend on normal turnover if a smaller force can be used.)

4. Show the people involved that the change will help them. Point out that a low-cost, high-efficiency operation is tied in directly with their own self-interest: the better the company does, the better they are likely to do.

5. Start putting the program into effect by working with the most cooperative people. And give credit to those who help put the program over.

6. From the technical side, explain in detail the way the job was handled in the past and the way it will now be done. Tell the workers how much will be saved in manpower, materials, and time with the new methods, and give them the figures on how much the change costs.

As the final step in the cost-reduction program, the supervisor has to follow up to make certain all the carefully thought out ideas are actually being carried out on the shop floor. ◆



The Job of the PERSONNEL ADMINISTRATOR

In seeing that company policies are fairly developed and properly carried out, he eliminates many problems for line management

By Leon J. Dunn
Vice President and Factory Manager
Veeder-Root, Inc., Hartford, Conn.

FROM outside the office, the personnel administrator's job may look like a feet-on-the-desk kind of deal. But it isn't, for the personnel administrator has to solve human relations problems before they can snowball through the company. It's his job to make sure the basic personnel policies of the company are carried out fairly for all employees, even if this sometimes seems to take the form of "needling" line management. Actually, as we shall see, the personnel department serves line management in many ways, for it acts as a clearinghouse for many human problems of the organization – problems that the supervisor in a large organization could not undertake for himself without becoming hopelessly bogged down.

The personnel administrator must not only see that personnel policies are executed properly; he has the even tougher job of helping to shape these policies. These policies – and,

in fact, all activities of the personnel department – have one basic aim: to make the best possible use of the company's human resources so that it can operate profitably and provide good, steady jobs.

How does the personnel administrator achieve these goals? Basically, by doing his utmost to see that the company is successful in the following five areas:

1. ***Deserves good men.*** The personnel administrator has to make sure that the company has a reputation in the community for being a good place to work. Wages have to be at least equal to those prevailing for comparable work, the benefit program must meet the same test, and working conditions have to meet high standards. The company has to "live right" to attract the kind of people who will stay and grow with it.

This doesn't necessarily mean bigger and better company picnics or more bowling alleys. But it does mean the company must be known as a fair, businesslike organization where good men have a chance to get ahead. To establish the policies needed to do this, many personnel administrators find they must be "irritants" as well as advisors to top management. The personnel administrator must not only work out the fundamental policies, but frequently he must also sell them to management.

2. ***Hires good men.*** The personnel administrator must establish an efficient selection system. But even if he uses all the latest scientific employment tests, the personnel administrator has to maintain a good measure of horse sense when it comes to hiring people. In addition, one of his other duties is to help supervisors improve their techniques of interviewing and evaluating.

3. ***Hires them for keeps.*** The personnel administrator has to spur management to schedule production as far in advance as possible, consider product diversification, and develop new products. In short, he has to promote everything management can do to insure stable employment. The personnel administrator does not have the responsibility of carrying out these programs, but he must constantly be driving for their acceptance insofar as they contribute to steady employment.

One of his duties in "hiring for keeps" is to make it perfectly clear to employees whether they are being hired permanently or are being taken on to fill in during vacation periods or for temporary work. This has a significant effect on the company's reputation in the community and prevents a lot of misunderstanding.

4. ***Makes good men better.*** Here, the personnel administrator has to establish a sound method of employee indoctrination. The first impression, the feeling of security and of "belonging" that goes with getting off on the right foot, sticks with a new man and has an important bearing on the attitudes he forms as he moves into his new job. The supervisor picks up the responsibility of preparing the man for the job and contributing to his advancement, but the personnel administrator is still re-

sponsible for the company's over-all employee-development program.

5. ***Puts people on your team.*** This is where communications comes in. The personnel administrator has to work through existing communications channels and sometimes create his own channels to make certain that everyone gets the word.

At our company we have three main communications goals:

a. To make sure all our people know how the organization works, what it does, and how one department relates to another.

b. To report promptly on the economic situation as it affects our company's operations, the status of competition, and the progress of sales.

c. To report, interpretively, internal developments, including the progress of labor negotiations. This interpretive reporting explains the "why" of events that affect employees as well as the "what."

The personnel administrator is not only a useful staff executive in his regular capacity, but he can play a very important role in trying to stabilize employment. It takes considerable thought, careful planning, and an inordinate amount of aggressiveness for a staff man – but the rewards can be great in improved employee relations and increased operating efficiency. ◆

"Hey, 'Disgruntled Employee,' they published your letter!"

When It's Time for a CHANGE...

By Robert Tannenbaum

Workers may resist it with everything they've got—from tardiness to restricted output. Here's how the supervisor can make changes more acceptable

ONE of the most difficult problems a supervisor has to face these days is overcoming resistance to change. This problem is becoming more and more serious because of our rapidly changing technology and increasing know-how. As new ideas and methods appear, supervisors are finding themselves faced with the problem of helping people to accept the resulting changes.

What are some of the barriers people place in our way as we attempt to introduce change? We may encounter considerable aggression on the part of the individuals who are subject to the change; they may openly attack us as we try to introduce the change or become hostile in other ways. We may find that the amount of sloppy or careless work increases; we may find a disinterest on the part of individuals to do that which they are called upon to do; grievances may increase in number. Where a union is present, we may be

faced with numerous slowdowns or even strikes. A few studies have indicated that absenteeism, tardiness, and turnover are very definitely methods used by people to deal with a change.

There is one type of barrier that has probably been studied in this context more than any of the others —the restriction of output. Often, great care is exercised in timing operations, setting standards, and otherwise working out the details of a wage-incentive system; and yet at least part of the work group forms into what sociologists call an informal group, under a leader of its own choice. This group decides what a fair day's work is and develops methods of keeping the nonconformer in line. The individual who starts to respond to the incentive is held in check by sanctions which the informal group is able to bring to bear against him. This restriction-of-output device has also been used in dealing with other types of change that management has tried to introduce.

Why this kind of behavior? Why do individuals set up these barriers in our way, making it difficult for us to do the kind of job we think is important in terms of the organizational objectives of the company? In order to get some insight into behavior of this kind, we must first try to understand the needs of the individuals who are actually establishing these barriers. People's behavior results from their efforts to satisfy needs that are important to them. These needs lead them to behave in a way that will help them attain what we might call personal goals. Personal goals are those which an individual feels will satisfy his needs.

Conflicting goals

The organizational goal, on the other hand, is the thing the supervisor is trying to accomplish by getting the members of his work group to behave in certain ways. It often happens, however, that the personal goal of the individual is not the same as the organizational goal—or they do not appear to have anything in common.

In this kind of situation, people tend to become disinterested in the work. All that is important to them is attaining the personal goals that will satisfy their needs. This helps explain why very often workers seem to do the minimum they have to do to get by, and you start asking yourself, as every generation has, "What is happening to people nowadays? Why are they so lazy? They don't seem to care any more. Their standards are going to pot." This is all quite understandable if a person is interested only in attaining a personal goal. He quickly tries to figure out the minimum he has to do to attain that goal, to get that pay check or whatever else is important to him; and he does not have any real interest in attaining the organizational goal.

New ideas and methods almost al-

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ways, at the outset, represent a threat to the security of the individuals involved in the change. The individual asks himself, "What does this mean to me? How is it going to affect me?" And this is what is really important in determining his behavior. He starts to wonder, "Have I been doing a poor job? Is the power or prestige which I now have going to be here after the change has been introduced? What about the skill which I have spent years developing—is it going to become obsolete?"

The individual is concerned that the change may either make it impossible for him in the future to satisfy certain of his needs or to satisfy them as fully as he has been able to in the past. And when an individual becomes threatened, he develops modes of behavior (the barriers) to deal with the threat.

There are also certain group influences to consider. We have to recognize that the behavior of an individual is affected by the group; no individual functions in social isolation. And very often changes have a very important impact on established ways of doing things within a group—on established norms or values. When this is true, the group reinforces the individual's feelings of insecurity and adds to the problems we face in introducing change.

Overcoming the barriers

Using this as the basis to explain why people behave in the way they do, how do we deal with these barriers? How do we overcome them in order to gain acceptance of new ideas and methods and processes?

At the outset I should like to suggest one generalization. Of very great importance is the human atmosphere that exists between the person trying to introduce the change and the individuals who are subject to the change. If mutual confidence is not present, if people distrust one another, the strength of the barriers will be greatly increased. When a person has a real sense of trust and confidence in another person, he is much more likely to go along with what the other person is trying to do.

For people to accept new ideas or methods, probably three different things have to occur. *First, it is important that people understand the reasons for the change.* They have to get some insight into why a change is going to be made. Very often, supervisors will simply announce the change and say, "Here it is, boys; from now on we behave in this way." There is no explanation, no indication to the people involved as to why the change has to be made. Understanding of the need for the change is important if people are not to set up barriers.

Second, people have to see that the change is going to be good for them. This point relates back to the question, "What does this mean to me?" If it is not going to involve something better for the individual—or at least something as good—he is apt to resist the change. He is going to want assurance that there will not be any reductions in need satisfaction, and that the change will at least leave him no worse off than he is right now, or,

even better, that it may improve his present situation.

Finally, after the individual understands the reasons for the change and has seen what the change is going to mean to him, then generally *some new behavior will be called for on the part of the individual.* He may have to learn some new skills; he may have to develop some new attitudes; he may even have to change his whole frame of reference in order to deal with the new situation.

Three possible approaches

What are some of the methods you might use in bringing about change —methods that might at least minimize the strength of the barriers? One approach which is very often used involves selling. After you have worked out your plans, you try to sell them. Sometimes, perhaps, you go a bit further, and after you have gone through your sales pitch, you give the boys a chance to ask some questions. You try to answer these as frankly as you can. I would like to suggest that while the sales method does have certain advantages, it has many strong disadvantages. The selling approach is aimed at the intellectual level. You are telling someone else what the answers are. The other person is most often a passive listener —a person who is asked to accept that which you are trying to put over on him. Considerable research evidence indicates that even though you may be successful in reaching an individual at the so-called intellectual level, the likelihood is great that you will not have very much impact on the way that he actually behaves.

A second approach which might be used—a better one, in my judgment—is this: You, as a supervisor, formulate the new idea or develop the new method before approaching the employees. But you recognize that your first formulation of the idea or method is a preliminary one. You make it clear that it is subject to modification after consultation with the employees or with the union which represents them.

Now, it really takes a big person—big in terms of his total personality—to use this approach. When a person gets into a line position, he often has a feeling that he is supposed to have all the answers, that he is lowering himself in the eyes of others even to suggest that maybe they may be able to offer something that will improve his idea. There are a lot of people who are small in this respect, who find it difficult actually to consult those who are involved in the day-to-day operation – the people who, after all, ultimately determine the success or failure of the change. A person who is big enough to use consultation, to recognize that the people on the firing line very often have much to offer, is much less likely to be faced with barriers than is the "salesman."

The third approach involves even more participation on the part of the people subject to the change. It involves what we might call group decision. It recognizes that if the new idea or method is really going to be accepted, it had better be worked out by the people who are going to

have to live with it. It recognizes that if people who are threatened by a change have an opportunity actually to work through from the beginning on the new idea and to assure themselves that their needs will be satisfied in the future, they will then recognize the change as something of their own making and will give it their support.

If you think this is ivory-tower theorizing, let me bring to your attention a very interesting research study that was conducted a few years ago in a sewing plant of the Harwood Manufacturing Corporation, in Virginia. The experiment was set up to try to measure the relative effectiveness of different methods of introducing change. Four groups were selected, which were matched in the important respects. The first group, called a control group, had the change introduced to it in a way which had been customary in the Harwood Corporation. This was the selling approach, with an opportunity for the individuals involved to ask questions.

The first experimental group used participation by representation. A few representatives were chosen from the group, and these individuals participated in designing the changes to be made in the job and in setting the new piece rate. After this participation, the representatives went back to the group, told them what had taken place, and helped train the other members in the new method of performing the work.

The second and third experimental groups used total participation. Here,

"Your vocational aptitude test indicates that your best opportunities lie in a field where your father holds an influential position."

every member of each of the groups participated in designing the changes, in setting the piece rate, and in learning the new method of work.

What were the results? Prior to the change, all four groups were producing around 60 units per hour under an incentive system where a unit was defined as one minute of standard work. After the change, the control group's production fell down to somewhat below 50 units, climbed up thereafter to 50, and maintained the level of 50 units per hour for the balance of the experiment, which was approximately 30 days. Interviews conducted with members of the control group during the experiment clearly indicated that restriction of output was taking place and that 50 was now looked upon by the group as the new standard. Antagonism toward management was marked, and there were 17 per cent quits during the experiment.

In the first experimental group—the one that participated through representation—production fell to about the level of 40 units, but it quickly rose until, about the fourteenth day, it passed 60, and continued on up to about 65 units. The two other experimental groups—the ones under total participation—fell down in production on the first day but immediately recouped to the level of 60 and thereafter continued to show an increase, reaching a level approximately 14 per cent higher than their production before the change. Not only did production increase for these two groups, but there was also definite evidence of less aggression toward management and there was no turnover among those people.

Overcoming resistance to change, like handling many other on-the-job problems, involves the supervisor in trying to understand the people with whom he works and in dealing with them as human beings whose feelings and attitudes deserve respect. ◆

The Grapevine

Of all the forms of communication within an organization, the grapevine is perhaps the most direct as well as the most merciless. It discounts what we say and reports what we do—or what rumor has it we are doing or going to do. Fine phrases are stripped of their felicity, and carefully worded announcements are bereft of tact, as the news speeds over the grapevine. No other form of communication works as fast. Nor is it any respecter of confidence or secrecy. Frequently articles appear in company employee publications announcing plans which have supposedly been closely guarded secrets but are stale news to the organziation by the time they appear.

Probably no one will ever succeed in fathoming the mystery of how the grapevine gets some of its news. But there is no questioning the fact that it is the most sensitive of all channels of communication. Exasperating as it is at times, a good grapevine is a valuable asset to any management—provided the management is completely sincere and honestly interested in its employees.

—The Clarkson Letter

By William D. Fentress
Personnel Manager
The Formica Company, Cincinnati

Human relations is the supervisor's job—
the one responsibility he cannot delegate to others

FOREMAN John Ryan was standing near the assembly line when Pat Akers came in and took his place at a packaging machine. He was 20 minutes late, and Ryan had been just about to put Joe Byers on the machine to fill in. Ryan considered the situation for a minute. Pat had been late three mornings out of five that week, and the week before he had been out two days. He had what seemed like good excuses every time, but his absences had upset the schedule and had caused Ryan a lot of extra trouble getting out the work.

"Joe," Ryan said finally, "take over for Pat a few minutes, will you?" He asked Pat to come into his office. Inside, he motioned Pat to a chair and sat down himself. "What's the trouble this time, Pat?" he asked.

"Car broke down." Pat looked at Ryan as if daring him to question the excuse. Ryan didn't. It was possible that Pat's car *had* broken down.

"Pat, that's five pretty good excuses in two weeks. It's getting so you're off the job too much."

"It comes out of my pay check, doesn't it?" Pat's face flushed, and he got up from his chair.

"Wait a minute, Pat," Ryan said calmly. "This isn't like you. You've been here a long time, and you've never been off the job like this before. Is something wrong?"

"No, nothing's wrong. Everything's falling in on me, that's all." Pat was visibly upset and was edging his way toward the door.

"Hold on, Pat," Ryan said. "What do you mean—everything's falling in on you?"

"My wife's in the hospital," Pat blurted out. "They don't know what's wrong with her—they think they may have to operate. And the kids – I don't know who's going to take care of them. Sometimes I feel like I'm going crazy."

"I'm sorry to hear about your wife, Pat. But, for gosh sakes, why didn't you tell me about it before?" Ryan asked. "Maybe I could have helped out somehow."

"I didn't think you'd be interested," Pat mumbled. "You never seem to have time to talk to anyone except about getting the work out. I didn't want to bother you." Pat eased his way out the door, and Ryan sat thinking about what Pat had said.

"I'm sorry about Pat's wife," he thought, "but, damn it, do they expect me to be Mr. Anthony on top of everything else?" Ryan felt his department was too big for him to be able to take on the personal problems of all his workers. He had too much to do just trying to meet schedules on time and maintain quality.

Ryan's problem is a pretty common one these days. Supervisors have a lot to do, and it's easy to forget that workers have problems, too. If they're personal problems, workers may bring them to the job; if they're job problems, workers may stay home in an attempt to escape them.

Sometimes you hear old-timers say, "Give me the good old days." Frequently what they remember about the good old days is the time when their department was small enough so that the supervisor had a chance to get to know every worker. He often knew personally his employee's wife and children; knew that "Joe's beagle is the best rabbit hound in the county." On occasion, he may have hunted or fished with Joe.

Today, to a large extent, this close contact between worker and supervisor is disappearing. For example, you may sometimes hear a worker say something like this: "I guess I'm doing all right on the job—the boss never said otherwise. You gotta figure you're doing O.K. if nothing is said."

Or take the case of the shift superintendent who spotted a new girl working one of the machines. To make conversation, he asked her if she knew what the part she was working on was used for. "Know what it's used for!" she exclaimed. "I don't even know what I'm doing!"

The chances are that neither of these remarks would have been made if the supervisors involved had main-

tained closer personal contact with their workers. Much of the loss in personal contact today is a result of the tremendous pressure to increase production and the need for extra employees that developed during World War II. Because of these pressures, many personnel departments came into being where none had existed before.This caused many supervisors to adopt the attitude that anything to do with people was a "job for personnel." In other words, where personal contacts were concerned, "Let George do it."

But any supervisor who really thinks about the problem knows that the personnel department can't carry the ball for him when it comes to human relations.So far as the worker is concerned, the personnel department is remote—an impersonal part of the organization. To him the supervisor is the company, and it's up to the supervisor to find the time to keep in contact with the people in his department.

It's impossible to streamline human relations. There's no short cut: each person is an individual and has to be handled in a different way. However, there are three main needs that almost everyone feels, and this is where personal contact can be most effective:

Recognition. The need to be appreciated and noticed by others is a universal trait. When it's not satisfied, a worker will do much less than he is potentially able to do.

For example, Jerry Muller, who worked in the maintenance department, was pleased when his supervisor asked him to help out on a special job. Jerry regarded it as a compliment that his supervisor picked him for the job instead of one of the other men. He did the job well, too—and then waited. His supervisor had known he could count on Jerry and was pleased with the results. He assumed Jerry knew he was grateful but never got around to saying anything about it—Jerry would know how much he appreciated the work.

The only trouble was that Jerry didn't know how his boss felt. And the next time he was asked to do a special job, he managed to get out of it.

In this case, just a few words of praise from the supervisor would have made a world of difference.

Feeling of belonging. This is another universal human need that can hardly be satisfied without personal contact between worker and supervisor. Someone has said, "Obedience can be ordered, but loyalty is earned," and loyalty is almost synonymous with the feeling of belonging.

To earn loyalty, a supervisor first has to show his loyalty to the people under him. He has to be able to delegate authority and act as though he is certain that everyone in his department will do a good job. And when the chips are down, the supervisor has to back up his men. This is the kind of personal contact that will make the people in his department feel as though they belong, that the work they are doing is important.

Sense of fairness. Most supervisors believe they are fair in their

dealings with employees. However, unless they personally explain the reasons for many of their decisions, the employee may feel he is being treated unjustly.

For example, a supervisor transferred one of his workers to the third shift so that the worker wouldn't be laid off. But he didn't bother telling the worker the reason for the transfer. The supervisor was satisfied that he was doing the best he could to save the worker's job.

The worker, however, didn't want the third shift and felt he was being picked on. As a result, he made several unfavorable comments about the supervisor to other workers, which were detrimental to the supervisor's reputation among his men. In addition, the worker's production fell off because he was dissatisfied.

Obviously, if the supervisor had taken a few minutes to discuss the situation with the worker, the worker's reaction to the change in shift would have been different.

Maintaining personal contact with workers may sometimes seem like an unnecessary extra to the supervisor who's in a rush to get the job done. But the job can't help but be done better and faster if workers feel that they are recognized, that they belong, and that the supervisor is fair and impartial. An employee can gain this security only through that extra personal contact between supervisor and worker. It's a job that can't be handed over to the personnel department. It can't be handled on a "let George do it" basis. George doesn't work in the department, but the supervisor does. ◆

Safety Reasoning — In Rhyme

To stimulate safety-consciousness, the Washer Co., Binghampton, N. Y., confronts employees with the following thought-provoking stanzas:

If you are careless
You have two chances—
One of having an accident
And one of not.

And if you have an accident,
You have two chances—
One of getting injured
And one of not.

And if you get injured
You have two chances—
One of dying
And one of not.

And if you die—
Well, you still have two chances—
But why be careless
In the first place?

—Mill & Factory

HOW'S YOUR TELEPHONE PERSONALITY?

By Donald Clinton Power
President
General Telephone Corp.
New York, N. Y.

People's opinions not only of you but of your company are influenced by the way you handle telephone calls

DID you ever realize that as a supervisor you are also a public relations man for your company? Every time someone calls you on the telephone, as far as he's concerned, you *are* the company. When you talk, it's the company talking. And if you sound cheerful, clear, and interested, his attitude toward the company will be a good one.

Below are a few helpful dos and don'ts for handling telephone calls. After reading them carefully, if you decide your telephone personality is perfect, congratulations. If not, why not try to improve? After all, your telephone personality is sometimes the only way people can judge you, and their favorable judgment can mean dollars and cents to you and your company. So let's talk business.

Grab that phone. Nobody likes to be kept waiting, especially on the telephone. So answer yours promptly. If you can't, explain the delay and apologize for it. Your caller may have

Grab that phone.

good news or an important message for you, and he may not have time to wait.

Be easy to trace. When you leave your office for any length of time, don't keep your absence a secret. Someone may call for information that only you can give. So let it be known where you can be reached, how long you'll be there, and when

Be easy to trace.

you'll be back. That way, if someone calls, whoever answers won't have to embark on an office-to-office man hunt. Time is money, so when you leave, leave word.

See yourself as others hear you. Ever stop to wonder how you'd sound if you could call yourself? You'd find your speech has four important characteristics: cheerfulness, distinctness, loudness, and speed.

Be cheerful. If you're able to get that "glad to hear from you" ring in your voice, it will make your caller feel good, and you'll feel better, too.

Talk normally. Some people try to change their personalities when they pick up a receiver. Some roar like a bull moose paging its mate. Others whisper as though their message were a deep, dark secret. Still others try to sound sophisticated, or mechanical, or cute, or like a big shot. But

See yourself as others hear you.

real big shots invariably talk clearly and simply.

The best telephone voice is your own. So be natural. It's easier, simpler, better business all around.

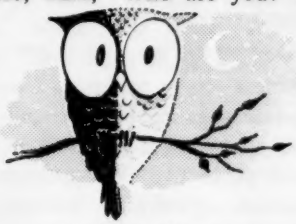
Tell the world who you are. If you want to save time and sound businesslike, too, tell your caller right off the bat who you are. "Sales Department, John Brown speaking," sounds efficient and saves your time and your caller's. "Yes" or "hello" means nothing. If you answer someone else's telephone, "Mr. Gaffney's wire, Mr. Jay speaking," makes everything clear.

Don't kick a caller around.

Don't kick a caller around. Nothing is more irritating than the "telephone runaround" — being kicked from one extension to another. When you get a call, handle it if you can. If you can't, tell the caller you'll transfer him to the right party. Then

do it, with all the promptness and care you would expect of someone else. It's worthwhile treating all calls as important. Most of them are.

Find out who. If you answer someone else's phone and the caller doesn't identify himself, try to find out tactfully who he is. Don't, of course, bark, "Who are you?" He



Find out whooo.

may be the chairman of the board, and you'll find out! A better way is to ask, "May I tell him who's calling, please?" or "May I have him call you?" And don't put down the telephone until you're sure the conversation is over; the caller may want to talk to someone else.

What was that crack? You wouldn't think of slamming the door when a visitor leaves your home. Give your telephone caller the same courtesy. At the end of the call, hang up gently. Don't bang the receiver so that your caller gets a sharp crack in his ear. Next time, he may get even.

Don't trust to memory. If there's a message, write it down. Even if there's no message, make a note of who called and at what time. If the caller would like his call returned, be sure to get his name and number accurately.

Don't trust to memory.

It's all in the way you call. There is always the chance that the person you're calling may be very busy. So to save your time and his, identify yourself quickly and state your business. Be cordial, but be informative and businesslike. Incidentally, never try to fool an operator or a secretary into thinking you're a personal friend

It's all in the way you call.

of Mr. Whatzit if you're not. You may get away with it once, but not the next time.

Wrong number? Nobody enjoys answering or calling wrong numbers, and there's a very simple way to avoid them. Pronounce the number you want distinctly, and dial carefully. Always look up doubtful numbers in your directory.

If you do get a wrong number, give the other fellow a break. Refrain from slamming down the receiver with a curt "wrong number." Instead, say, "Sorry, no Mr. Pofnik here. Are you calling Orchard 6-9999?" This is not only more courteous, but you won't get another call asking for Mr. Pofnik.

Wrong number?

If you're the caller and the voice at the other end sounds strange, ask pleasantly, "Is this Orchard 6-9999?" If not, apologize briefly and recheck your directory.

People are proud. Most people are like the rest of us – in love with their own names and titles. So where you can, use them frequently. "Professor," "Colonel," "Doctor" – even the simple "Mr." or "Mrs." – followed by the name, is sweet music to their ears. Try to interweave titles generously with other expressions of courtesy, such as "thank you," "sorry," "I beg your pardon."

Unless you're calling to foreclose the mortgage or borrow $50, you can't miss having your call remembered pleasantly. And pleasant association – good will – is the cornerstone of good business. ◆

Living Standards: U.S. vs. U.S.S.R.

How do Soviet workers fare in a "workers' paradise"? The U. S. State Department recently gave this comparison of earnings on two sides of the Iron Curtain:

"For a worker to buy a pound of butter in New York, it takes 27 minutes of work; for a similar worker in Moscow, it takes over six hours of work.

"For a pound of sugar, three minutes 20 seconds in New York, 84 minutes in Moscow. For a quart of milk, seven minutes in New York, 42 minutes in Moscow. For a dozen eggs, 25 minutes in New York, nearly three hours in Moscow.

"For a cotton shirt, nearly one hour in New York, 22 hours in Moscow. For a man's suit, three days in New York, 47 days in Moscow. For overshoes, one day in New York, 13 days in Moscow."

The worst feature of his standard of living, points out *The New York Times*, is undoubtedly his housing. If the worker is single with no dependents, he probably lives in a barracks or a dormitory, sharing a room with several other fellow workers of the same sex. The typical worker with a small family, say two or three children, is likely to have one room of an apartment, sharing kitchen and other facilities with the families living in other rooms of the same apartment. A family consisting of husband and wife may have only a part of a room, separated from other occupants of the same room by a makeshift curtain or screen.

The contrast between Soviet wages and Soviet prices clearly means a low standard of living, and to raise this somewhat, most urban housewives and older children also work. Roughly half the Soviet urban labor force consists of women. Six days a week they labor in the factories or offices for the entire working day. In their free time and on their day of rest they must prepare the family meals, do the washing, and otherwise accomplish the household chores.

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